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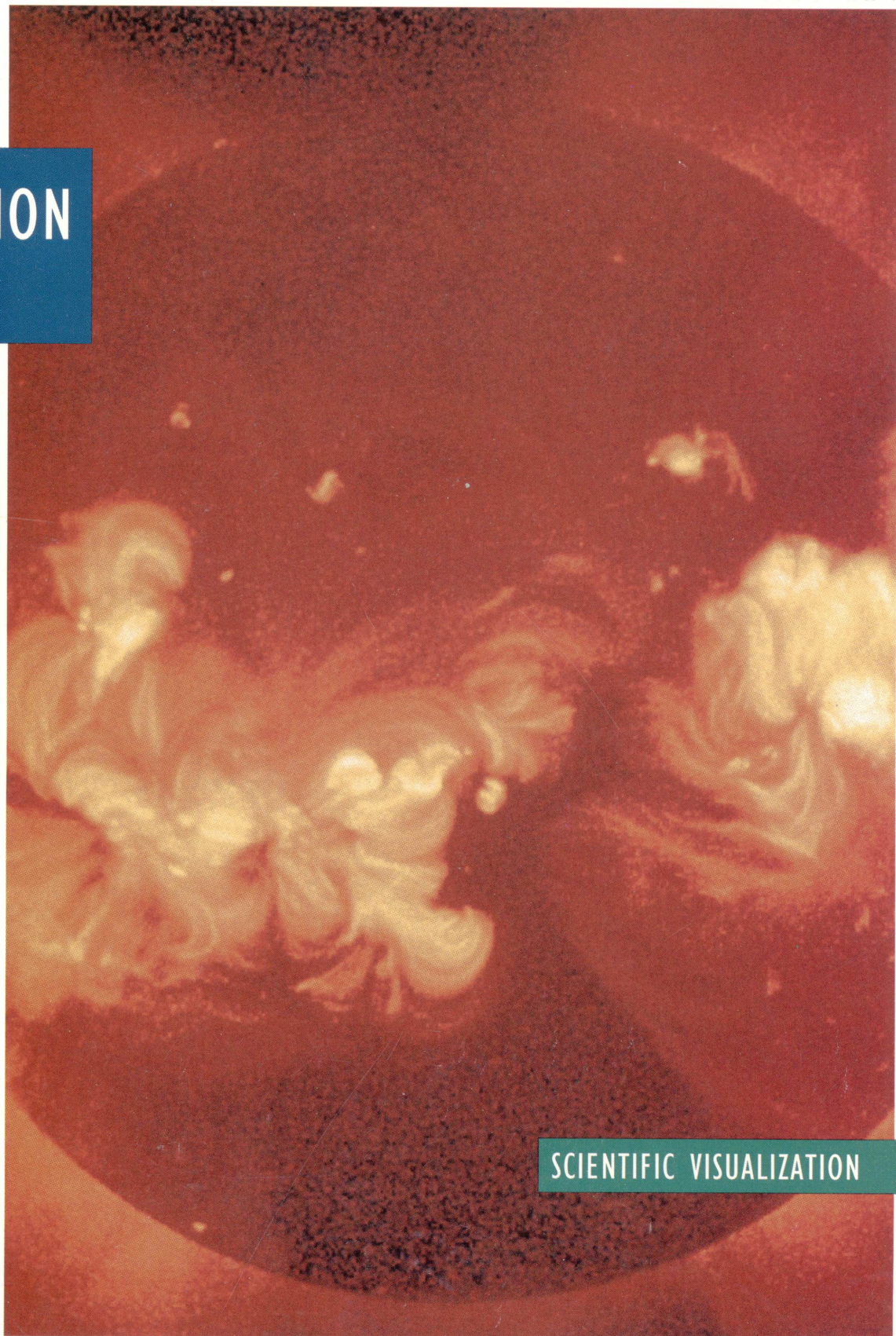
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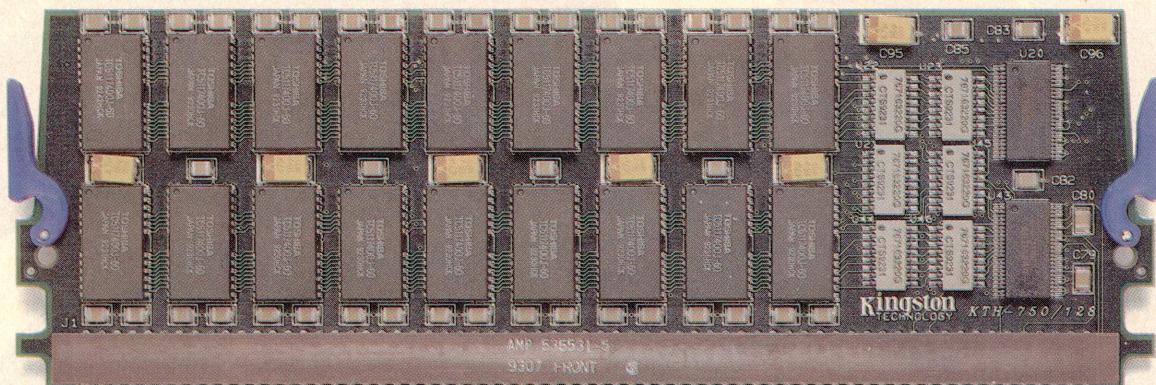
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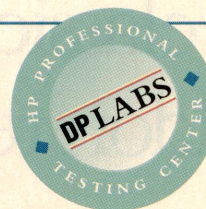
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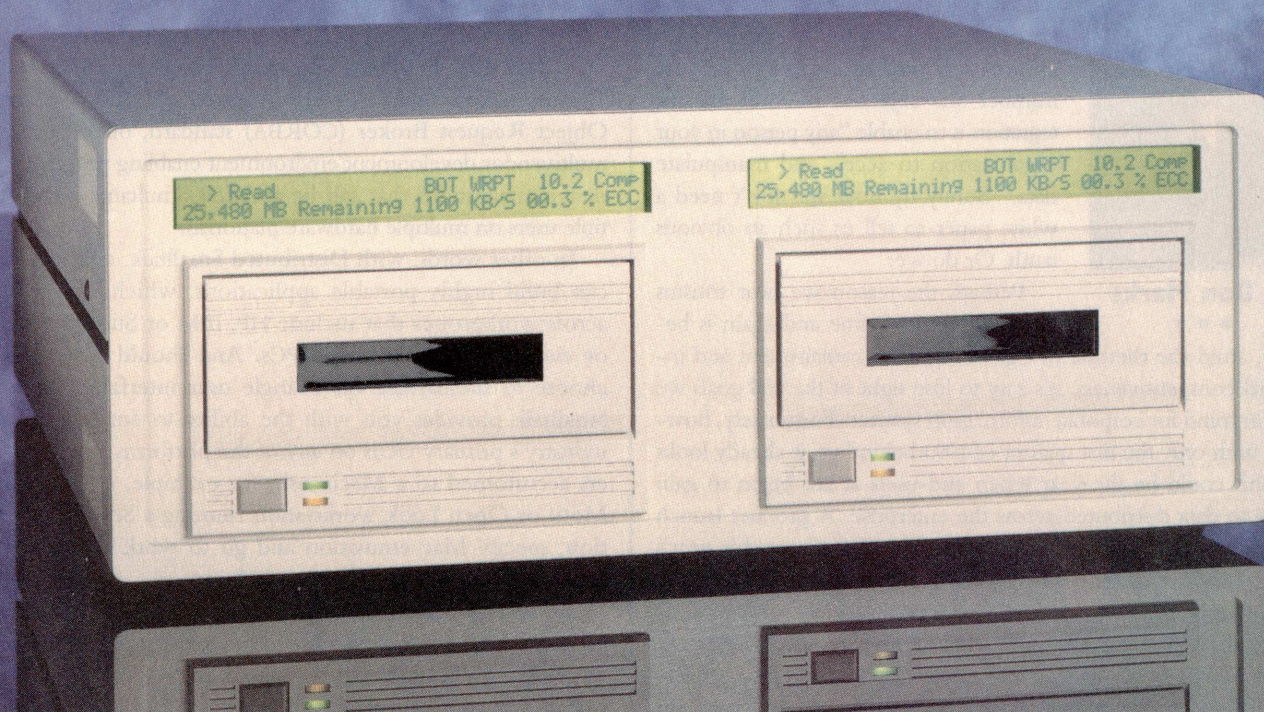
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Objects And Objectives



By Don Marks

• • •

Perhaps the reason we hear truisms like this repeated time and again is because, amid the rhetoric of rightsizing, cost-containment and industrial competitiveness, it's easy to lose sight of the real goals we have in mind for corporate information systems. Fortunately, however, with only the first quarter of 1993 behind us, it already looks like this could be the year when end-users at last begin to gain access to data distributed across the enterprise. A product launch and technology strategy announcement HP made at this year's ObjectWorld trade show in February provide some indication why this might be so.

Despite having the trendiest name in the industry, ObjectWorld is still a relatively small show, devoted to object-oriented technologies of all stripes: object-oriented development environments, object-oriented user interface design tools, object-oriented databases, etc. Most MIS managers — even in forward-thinking, open systems-minded HP shops — doubtless would consider it a pretty obscure conference, more likely to attract C++ devotees, Ada gurus and pony-tailed object-ites than the standard high-gloss marketing reps and business-suited information systems managers. But, thanks to HP, this particular show was different.

Smalltalk With Big Implications

As part of its ongoing efforts to stake out the object-orientation territory before its competitors wake up to the opportunities, HP brought out the heavy artillery. Wim Roelandts, executive vice president and head of HP's computer business, presented the keynote address and detailed the company's overall object technology strategy — a surprisingly coherent plan of attack for delivering object-oriented, integrated information systems into *commercial* environments. To HP's credit, DEC, IBM and Sun are only beginning to think in these terms, and all have biases or third-party alliances, such as DEC's eggs-in-one-basket attachment to Microsoft, that prevent them from articulating the kind of multiplatform enterprise computing strategy Roelandts described.

The cornerstone of Roelandts' remarks was the introduction of HP Distributed Smalltalk, a new product that resulted from a joint development project between HP and ParcPlace Systems (Palo Alto, CA). Distributed Smalltalk, which incorporates the first implementation of the Object Management Group's Common Object Request Broker (CORBA) standard, offers a complete multivendor development environment enabling programmers to design applications that can be accessed simultaneously by multiple users on multiple hardware platforms.

In other words, with Distributed Smalltalk, developers now can build highly portable applications, which can be shared across workgroups that include HP, IBM or Sun workstations, or even IBM or Macintosh PCs. And should your company choose to standardize on a single user interface, Distributed Smalltalk provides you with the ability to emulate all of the industry's primary GUIs on any of the platforms it supports. Users accustomed to a Macintosh, for example, could sit at any Motif or Open Look workstation running a Smalltalk application, specify Mac emulation and go to work with the icons, scroll bars and menus they already know.

More important, Distributed Smalltalk enables degrees of application sharing and code reuse never before possible. Indeed, rumors are already afoot that HP may in future redevelop its entire MPower multimedia product in Distributed Smalltalk, which could permit greater flexibility than HP SharedX — the product on which MPower is presently based. Thanks to its implementation of standards like CORBA and OSF's DCE, Smalltalk would allow application developers to specify local and global (or shared) functions with greater granularity. And entire workgroup applications, such as video-conferences, could be stored in OpenODB, HP's object-oriented database, for reuse or modification by other departments in the company. (For more on MPower, see Bill Sharp's article, "Does Multimedia Matter?" on page 36.)

Products like Distributed Smalltalk, MPower and OpenODB all should help HP achieve the goal of making enterprise data accessible to the users who need it. According to Roelandts, these individual products, which HP can combine and recombine as need be, are part of a wider object-oriented trail the company plans to blaze into the 21st century — a time when object-oriented applications will be taken for granted and integrated information systems will be as obvious as the need for them is today. "Those companies not adopting object technology," Roelandts observed in his ObjectWorld keynote, "will soon find themselves traveling by stage coach, while the rest of us take the bullet train."

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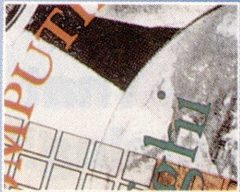
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INDUSTRY WATCH

Bill Sharp

Do you remember the deal when you bought a computer? Software. You may have noticed, they don't just throw it into the deal anymore. In fact, gradually, software pricing is the part of the sale you haggle over, and the hardware is almost thrown in. The increasing importance and competitiveness of software sales is the reason many vendors, including HP, are changing the way software is priced.

The rap on software pricing is that, for larger systems, software has long been sold on the basis of computer size. If you buy a big computer, you pay a big price for the software. If you buy a little computer, you pay a smaller price for the same software. But in truth, there are several software pricing schemes in use throughout the computer industry, including:

- Pricing based on computer size.
- Pricing based on operating system.
- Single-level pricing.
- Tiered pricing.
- Pricing based on number of users (user-based).
- Pricing based usage metering (usage-based).

The first four categories are what most users experience. The last two, however, are getting more attention as customers clamor for fair pricing, and vendors look for ways to keep customers without losing their competitive shirts. There is a far greater range of software pricing methods available on the market now than ever before, and this diversity is likely to increase. Even Digital and IBM are showing flexibility. In fact, Digital started modifying its pricing almost a year ago, well before HP — then again, Digital was more nervous about its customer base.

HP's Revised Software Pricing Strategy Balances Use And Users

Do You Get What You Pay For?

Do you remember that stuff they used to throw into

HP joined the growing throng in December 1992 when it announced simplified pricing for much of its software on the HP 3000 and HP 9000 server and workstation products. These pricing changes mean that some customers will save substantial amounts of money on software — that's the good news. The other news should come as no surprise. Whether you buy software from HP or another vendor, when some prices go down, others will likely go up, so some customers will end up paying more.

Winners And Losers

"There's some sense in the marketplace that user-based pricing means that all customers will pay less for software, but that is not actually the case," says Hans Galldin, director of the HP business unit for Cognos Inc., Ottawa, Canada, an HP software partner. "In reality, some will pay more and others less. The bottom line is that the cost of developing software is not going to go down because

of user-based pricing. But what is going to happen is a better allocation of the costs of the software. Light users will pay less and heavy users will pay more."

HP's own version of this pricing concept almost defies description. It appears to be a combination of CPU-based, user-based and tiered pricing. HP 3000 software, says HP, is now priced "per system, according to the number of users licensed for the HP MPE/iX operating system." This is not pure user-based pricing, but does modify software prices according to the number of users (see Table 1).

HP 9000 pricing for workstations and business servers is moving from a seven-tiered system based on processor power to a three-tiered system based on system expandability. Tier one includes workstations and entry-level servers, tier two includes midrange servers, and tier three includes HP Corporate Business Servers. The objective is to reflect more the number of possible users than the system power itself. Some HP customers were paying

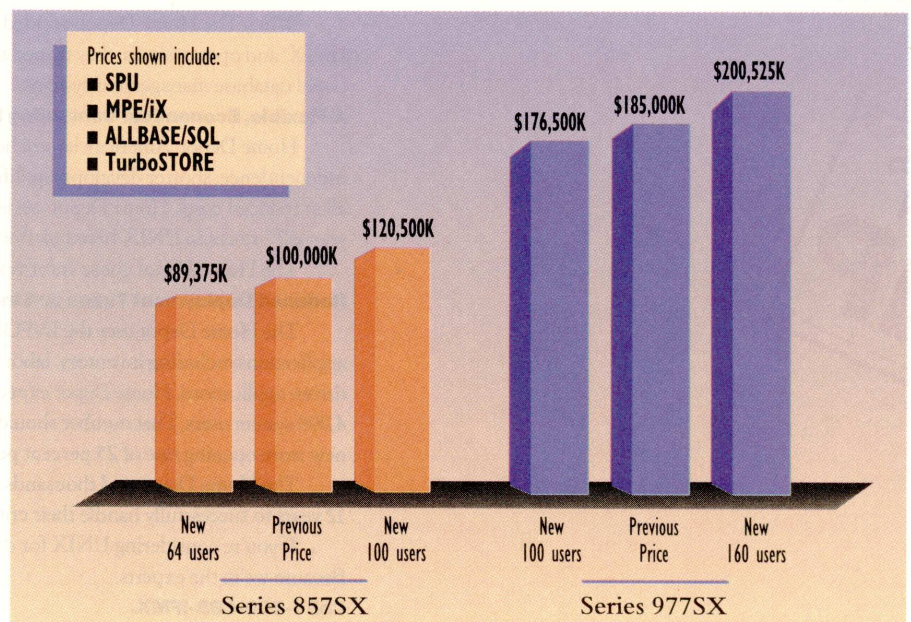
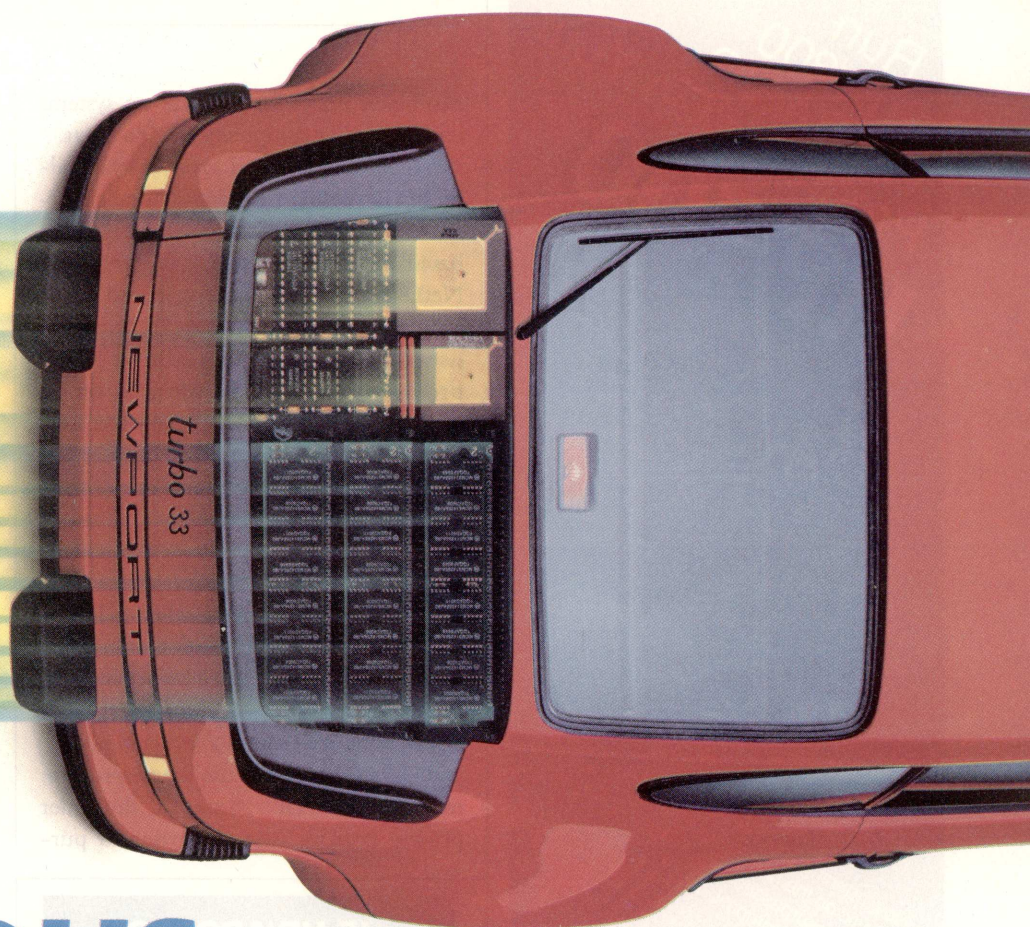


Table 1: HP's pricing concept modifies software prices according to the number of users.

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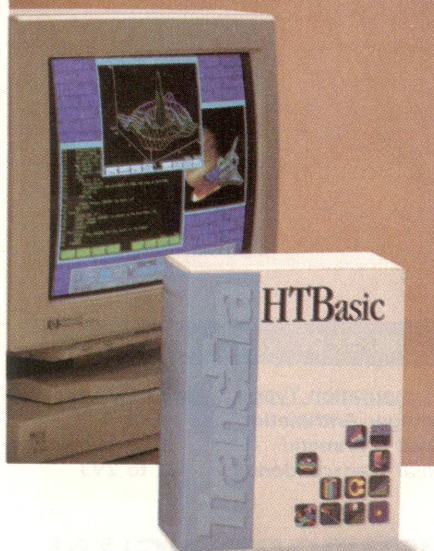
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exorbitant prices for software on systems employing big computers for few users.

HP also announced broader availability of HP NetLS, a vendor-neutral client-server tool for managing software access based on systems, users, time or usage. NetLS is part of OSF's Distributed Management Environment (DME). Increased use of shared licenses allows some products, such as SoftBench, to be accessed by multiple users across a network. Temporary software licenses are available to allow short-term use of software for evaluation.

The Soft Sell

HP's move to new pricing schemes is motivated as much by competition as anything else. "If pricing helps us sell by helping customers get more out of their software purchases, then it becomes a leverage point," says Dave Carver, software license program manager with HP. "Some of the older pricing policies were a barrier to pur-

chases." So as other firms made moves to loosen pricing policies, including Digital, IBM for the RS/6000, Silicon Graphics, Sun, Oracle, The ASK Group and others, HP had to make a move.

Independent software vendors who supply much of the software used on HP computers are not as independent as the above phrase implies — a fact that temporarily may have escaped HP's notice. When HP changes its pricing, ISVs get dragged along for the ride. And while for the most part they agree with the program, it does create some problems for them, and for their customers.

For Jon Witty, director of sales and marketing for Smith, Dennis & Gaylord Inc. and many of his counterparts, the problem is communication. "I was on a VAB council hosted by HP, and I think it was everyone's opinion that the thing we liked least about the new pricing program is that we were not told about it in advance. It was sort of sprung on us. They didn't give us time to study it or come back with suggestions."

At the same time, Witty says, "In many ways the program is indicative of HP getting a little smarter. While it will cause a lot of folks to go through hoops, and give others some grief, it means HP is listening to the marketplace, and that is good."

How will software vendors respond? "Most software suppliers will come up with a pricing strategy that will in some ways match ...what HP is doing, but will not be the same," says Witty. "We will do what we want to do, as long as we can defend our pricing strategy in an intelligent way."

Galldin at Cognos agrees there is work yet to do on the new pricing scheme. "HP's initiative is a good one, but there is fine tuning yet to do. We are modeling how we would move to this pricing and seeing what the impact would be on our customers."

Eventually, say Galldin and others, software use will be metered much as electricity is metered now. This usage-based pricing is starting to appear in some markets, but is more difficult to implement. Watch for this development during the next several years. ■

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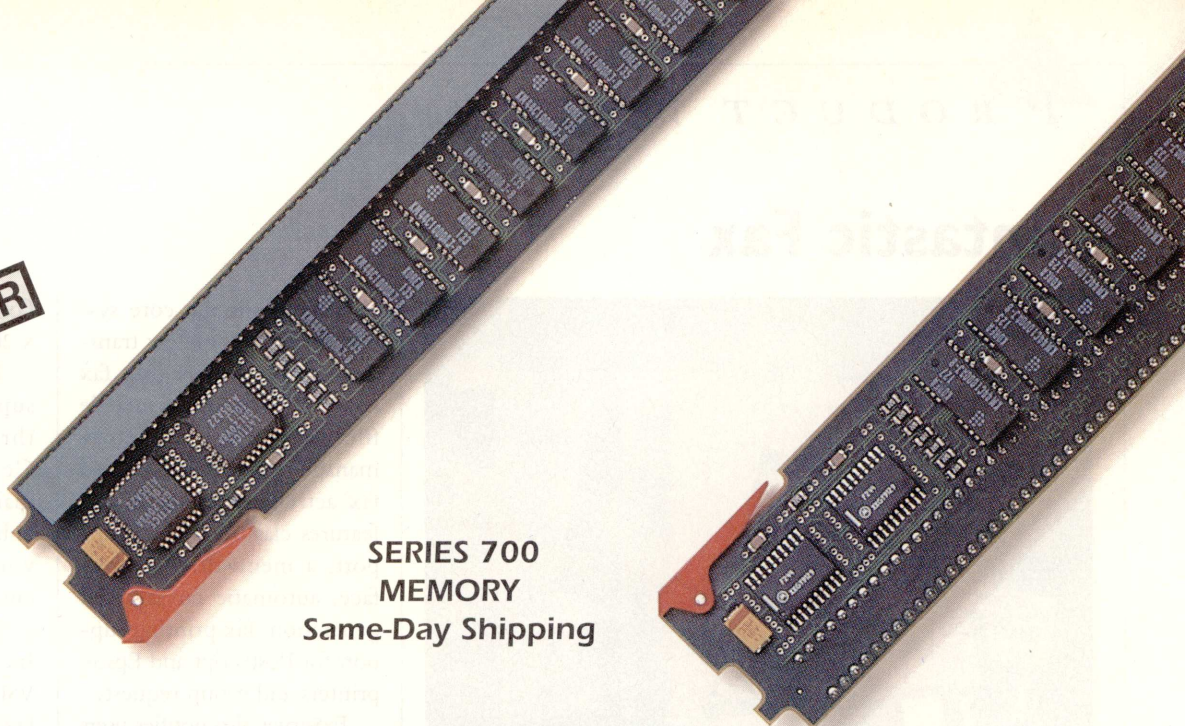
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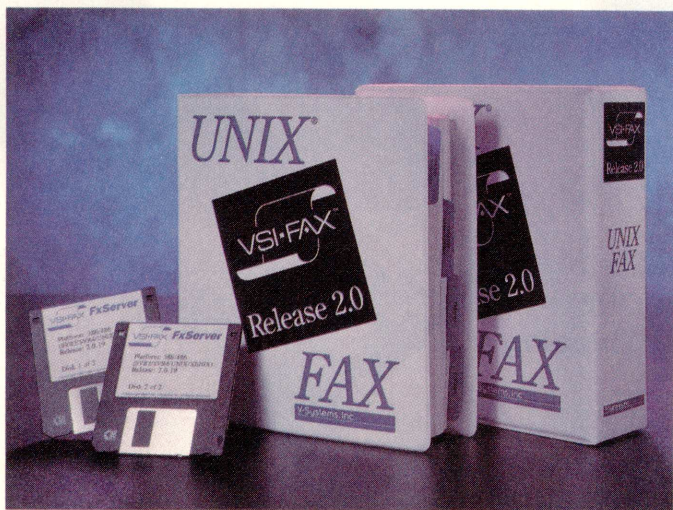
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FxServer is the core system for scheduling fax transmissions and managing fax receipts. Its functions include file conversions, directory management, scheduling and fax activity logging. It also features class II modem support, a menu-driven interface, automatic cover sheet generation, fax printing support for PostScript and Epson printers and group requests.

FxServer also notifies users of inbound transmissions, stores all inbound fax images to the UNIX file system and optionally routes the images to other users or printers depending on the identification given by the sending fax machine.

FxVision, a complete workstation/facsimile interface for the X Window System, is based on the Motif library and style guide. It enables you to easily view, send, receive, print, archive and manage fax documents using pull-down menus, option lists and standard defaults. Received faxes can be notated and distributed to other users throughout the network, eliminating paper and minimizing administration time.

FxScript is an Adobe-compatible PostScript interpreter that allows users to fax PostScript documents directly from applications that support the page description language such as FrameMaker, WordPerfect, Lotus 1-2-3 and Corel Draw. FxScript allows for the full decryption, decoding and rendering of Adobe Type 1 fonts with hints. It provides

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FxSupport is a portfolio of support services available through the VSI Support Center. It assists you in maintenance, integration and enhancement of VSI-FAX in your particular computing environment.

The Santa Cruz Operation Inc. (SCO) recently installed VSI-FAX in a corporate-wide fax implementation. From their Open Desktop workstations, SCO employees use the software to fax directly from the company's manufacturing applications, desktop publishing software, sales and marketing databases and customer response support applications.

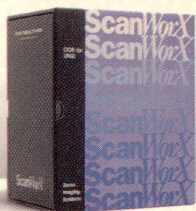
"The key users are customer service and tele-sales," says MIS Director Dale Burley. "And they're claiming tele-sales productivity has improved 50 percent... We're handling more calls per day to the tune of 15 to 35 percent. We can take more prospective calls [with VSI-FAX] — that means more sales."

The VSI-FAX modules are available on the HP 9000 Series 700 for \$1,495 for FxServer, \$795 for FxVision and \$395 for FxScript. Prices for the HP 9000/8xx are \$1,895, \$995 and \$595 respectively. — *Lonni Wright, Contributing Editor*

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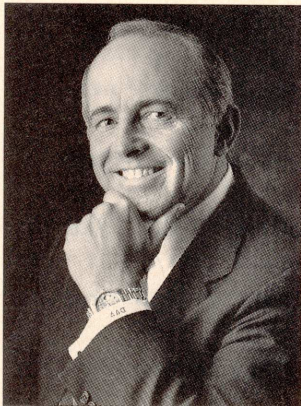
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Ross Systems Cuts In

*Staying In Step With Open Systems,
A Long-Time DEC Partner Adds PA-RISC
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**"We saw that HP-UX
is very successful
and very accepted in
the marketplace,
and that influenced us."**

Dennis Vohs
Chairman and CEO,
Ross Systems Inc.

From his desk in Atlanta, Dennis V. Vohs, chairman and CEO of Ross Systems Inc., seems unburdened by the computer industry's widespread sense of corporate doom. His decentralized firm can afford some confidence. In the fiscal year that ended last June, Ross reached \$76 million in sales, with net earnings up 311 percent. But today's software market is nothing if not mercurial. The new fiscal year brought acquisition-related charges of \$6.4 million.

Even with that setback, Ross plans to expand its markets by supplying software for the healthy HP market, particularly HP's hot-selling HP-UX business servers. That's surprising when you consider that this is the same company that, until two years ago, was selling all but exclusively to Digital's proprietary VAX/VMS market.

In fact, Ross's successes on VMS resulted in more than a 25 percent share of the VAX financial software market. And this Digital connection placed the company's foot inside so many large company doors that Ross can boast 30 percent of its customers are within the Fortune 500 ranks.

Of course, nothing lasts

forever, or at any rate, it might not. So as Digital's VAX fortunes have cooled, its software partner has started to look for other folks to fill up the dance card. At the same time, Digital saw the need for its partner to provide software for its own long-suffering Ultrix users.

"With the focus of the market moving to open systems, Digital helped fund our migration to UNIX," says a grateful Vohs. "And as we went into the Ultrix marketplace, it was obvious that many companies were going to be heterogeneous. That drove us to look more seriously at whether we wanted to sell only to DEC users. We met with some HP executives and they convinced us they had very good platforms and wanted a close relationship, like we have with Digital."

Many Ross users have mixed hardware platforms. "Monsanto has an agricultural division that is very into DEC, but their chemical division is very committed to HP," says Vohs. "In order to be a good partner to them we have to have both Digital and HP software. We also saw that HP-UX is very successful and very accepted in the marketplace, and that influenced us. I have to say that HP with HP-UX has the hot boxes in the midrange, and they expect to grow at double the industry average — it's great technology." — There's nothing like success to encourage close relationships.

Ross software now includes a good deal more than the financial products that spawned the firm. Following a leveraged buyout in 1988, Ross entered a period of growth through acquisition that included purchase of:

- Cardinal Data's line of distribution and logistics applications in 1989.

- Argonaut Information Systems' line of human resources applications in 1989.

- Pioneer Computer Group Ltd.'s GEMBASE 4GL and process manufacturing applications in 1991.

"We expect to continue to grow internally and through acquisitions," Vohs says.

Vohs followed these purchases with an agreement last year to move most of its products into the HP arena, first on HP-UX, and later to MPE/iX. For now, Ross is dancing with HP as fast as it can. And the best of these snappy numbers is the software firm's premier financial suite, Renaissance CS Series, a client-server version of its previous product. Vohs says there is "tremendous demand" for the product on HP-UX since it was announced in late January. He says it will be available on MPE/iX in late spring. Versions for both OSF/1 and Windows NT are also in the works. — *Bill Sharp, Technical Editor*

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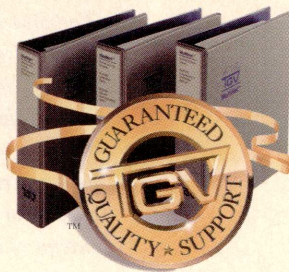
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CIRCLE 467 ON READER CARD

*Three HP Market Database Experts Square Off In
A Roundtable Discussion Of Third-Party Indexing
Technology, IMAGE/SQL And Future Database
Directions For The HP 3000*

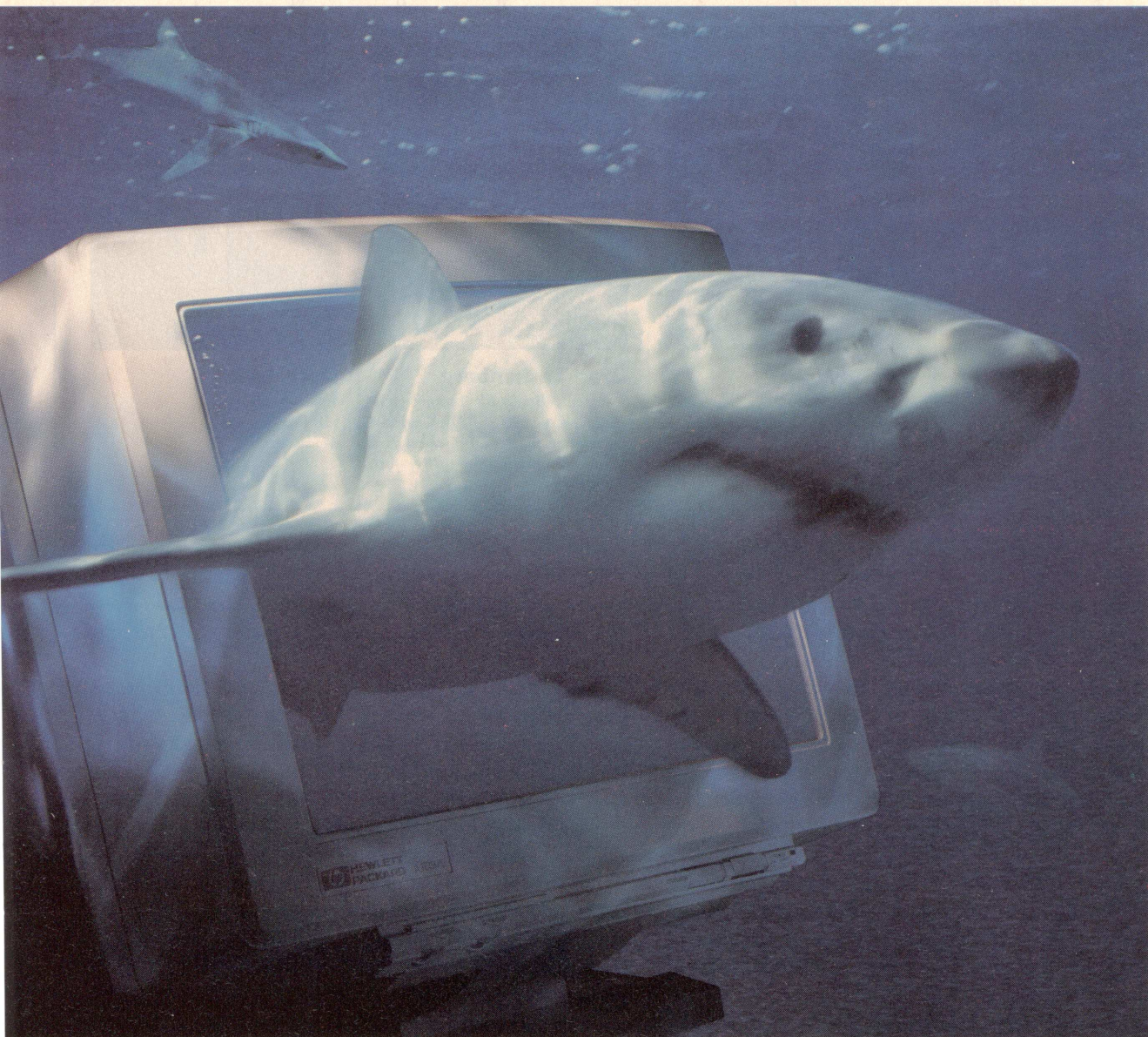
A Whole New IMAGE

Editor's Note: HP has made a number of enhancements to the TurboIMAGE database in the last year, including the addition of an integrated interface for third-party indexing software and an SQL read/write interface that could transform IMAGE into a full-fledged relational database. HP Professional recently conducted a roundtable discussion with a few noted IMAGE database experts who were directly involved with the implementation of some or all of these recent enhancements. The following is an excerpt of our discussion. — Don Marks, Editor-In-Chief

Marks: What does the addition of the third-party indexing (TPI) interface to TurboIMAGE mean for HP users and what exactly does the TPI provide? Let's start with Jim Sartain.

Sartain: The TPI is part of a broad range of enhancements we've recently made to TurboIMAGE, all of which have a common theme: They were all necessary steps to providing IMAGE/SQL. For example, the dynamic rollback capability supports IMAGE/SQL. Critical item update gives users the ability to add indexes on the fly via TurboIMAGE keys or third-party keys.

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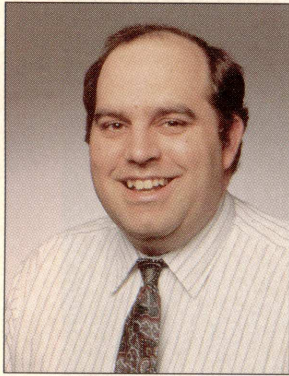
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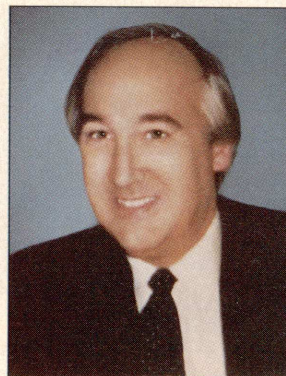
Jim Sartain

*IMAGE/SQL R & D Manager,
Hewlett-Packard.*



Eric Savage

R & D Manager, Dynamic Information Systems Inc. (DISC), makers of OMNIDEX database indexing software and the OMNIDEX suite of information access tools.



Brad Tashenberg

President, Bradmark Technologies Inc., makers of SUPERDEX indexing software and the DB General database administration utility for TurboIMAGE.



Don Marks

*Editor-In-Chief,
HP Professional,
Moderator.*

By transparently integrating the SUPERDEX and OMNIDEX products with TurboIMAGE, we've given users a number of other benefits as well. We've guaranteed that IMAGE data stays consistent with third-party indexes. And we've made installation of indexing products much simpler.

Also, HP utilities have been enhanced to support third-party indexing. For example, DBUTIL can now purge or copy an entire database, including the index files. The QUERY program is being enhanced so that it recognizes third-party indexing tools. This new version of QUERY will be available in the next major release of IMAGE, which will be part of MPE/iX 4.7.

Tashenberg: One of the biggest advantages users will see with the TPI is standardization. Previous to the integration of the TPI interface, the two major indexing products, SUPERDEX and OMNIDEX, took two entirely different approaches to IMAGE indexing. Now, through the TPI, we have a common approach, and there's a single standard for people who want to use indexing. I think that's a tremendous benefit to users.

Marks: Eric, would you agree?

Savage: Yes, to the extent that what people want is a standard interface to access TurboIMAGE. Of course, some things that indexing provides are not standardized within the TPI. Although the subset of capabilities that was standardized is now available through a common interface, other features are not standardized.

There's also an application programming interface (API) now available to third-party vendors who make database restructuring products and other utilities. This API allows indexes to be maintained in sync with changes made to the database. For example, if a database restructuring tool were to remove a data

set from an IMAGE database, there's now an API that gives equivalent instructions to the third-party indexing tool so it can make equivalent changes to the indexes. This allows a level of synchronization between indexing software and other applications that didn't exist before.

I might also say, however, that in many small shops that people don't have the time to actually recode their COBOL applications to IMAGE intrinsics — even with the new standardized indexing interface. At DISC, we've developed products that make it possible for users to bolt indexing capabilities onto existing IMAGE applications without making code changes. Our product, OmniWindow, allows users to establish a query windowing environment that gives them instant access to their data without making code changes.

Tashenberg: If I might add to that, one of the SIGIMAGE group's most requested upgrades for the last 15 years has been adding generic and partial key access to IMAGE. That's where the TPI project came from.

When HP announced TurboIMAGE 4.0, people were enthusiastic and excited about receiving this feature along with critical item update and other features they'd been looking for. They expected to receive generic and partial key access as part of the release. But one of the concerns we had was that, although IMAGE 4.0 incorporated the TPI interface, it still required the customer to come to either Bradmark or DISC for the actual indexing software that would provide this functionality.

We didn't want a sour grapes situation to arise where people thought they would obtain this functionality for free and then found out they had to pay extra for it. So instead, we now offer SUPERDEX Level 1, which provides partial and generic key access, essentially for free. This way any user that gets the TPI with TurboIMAGE 4.0 can obtain the promised functionality at no cost.



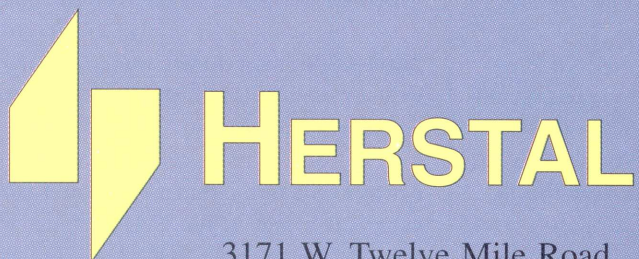
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CIRCLE 173 ON READER CARD

But the whole point about the TPI standard is that ISVs developing query applications and other ISVs, such as Oracle, Uniface, VitalSoft and Cognos, can now write to a standard interface. That means small shops — the ones that don't have a lot of money to spend to reprogram their applications or buy a bolt-on package — now benefit from a standard that allows them to take their report writing language, say it's Quiz from Cognos — the 7.29 version of Quiz will support the interface — and use indexing without having to worry about reprogramming or buying this or that add-on package.

Marks: What are some of the typical advantages that third-party indexing can offer to TurboIMAGE users? Why would they want to take advantage of the TPI?

Savage: Third-party indexing provides, among other things, textual searches (the ability to search for any word or value within a field), partial key searches (or generic key access as it's been commonly known), multiple key searches (the ability to use more than one key at the same time in a single table), pattern matching; Boolean and relational operators (AND, OR, NOT) and case-insensitive searches. These were the features DISC, Bradmark and HP were able to standardize on for the TPI interface.

Other features not standardized in the TPI include: searches across multiple data sets and multiple databases, phonetic searches (the ability to go after anything that sounds like the word you're searching for), plurality searches (the ability to go after plural versions of a word), synonym searches (for example, "Robert" and "Bob" can be considered the same and every time you go after "Bob" you get all instances of "Robert").

And there's also the whole area of user interfaces. Each product supports its own range of user interfaces. The new standardized API to TurboIMAGE is one way of getting access to the database, but there are also interfaces to products like Powerhouse, Speedware, Focus, Protos, Data Express and VISIMAGE. DISC also offers client-server interfaces through windowing products that interface to Microsoft Windows and Excel, Lotus 1-2-3 and other PC applications.

Indexing Meets IMAGE/SQL

Marks: Jim, HP recently announced that it would add an SQL read/write interface to TurboIMAGE and renamed the database IMAGE/SQL. Will IMAGE/SQL support the third-party indexing interface?

Sartain: That's the most common enhancement request we get for IMAGE/SQL. The initial release of IMAGE/SQL will ensure that, as with TurboIMAGE, when you update your data, your index is maintained in sync with the database. But the SQL Optimizer will not be aware of third-party indexing, so there-

fore when you perform an SQL query, it won't take advantage of third-party indexes.

Virtually everyone who hears about IMAGE/SQL and has heard of third-party indexing asks this question, so we see this as a very important enhancement request, and there's an active investigation going on within HP to determine how we can implement it. We see it as key because this would be another way that people could use indexing technology without having to [write or] rewrite applications.

When customers use an SQL client-server tool on their PC to retrieve data, they'll want to take advantage of any indexes that are available. In fact, I'd even go further than that and say they'll want to make sure there are indexes on the data they most frequently access because in an SQL environment you can't predict how people are going to want to access the data. Users want to perform ad hoc queries and any reasonable query needs to be indexed properly. HP will be updating the user community on the status of the TPI interface for IMAGE/SQL enhancement at the San Francisco INTEREX conference in September.

Marks: Brad, do you see ways that indexing technology could be integrated with IMAGE/SQL?

Tashenberg: I see indexing as a driving engine behind IMAGE/SQL. If you look at how most relational databases are used, you find that the strength of the RDBMS is flexibility: You can add tables at will, you can subtract tables; you can add indexes at will, you can subtract indexes. The technology we currently offer with IMAGE indexing will be expanded and enhanced when we move on to IMAGE/SQL. One beauty of indexing technology has been that it offers relational access capabilities, albeit not by means of industry standard SQL. That's why the SQL interface of IMAGE/SQL is so important: The SQL interface gives TurboIMAGE the sanction of an industry standard query language, presumably in addition to the benefits of the TPI interface.

When people talk about relational databases, there are two components that they mention. One is the SQL shell portion, which is the standard ANSI language used to access the data stored in the second component, the data structures portion. The internal structure of the "relational" database is theoretical at best, and if you look at Codd's definition of a relational database, pointers in the structure of the data itself are really irrelevant. What's important are the features it supports. There's no reason, therefore, why IMAGE couldn't provide the data structures portion of a relational database.

Marks: Eric, what do you think indexing technology could provide for users of IMAGE/SQL — or even relational database users in general?

Savage: One of the things we should look at with IMAGE/SQL, even if it brings in the TPI, is that it will do little more than

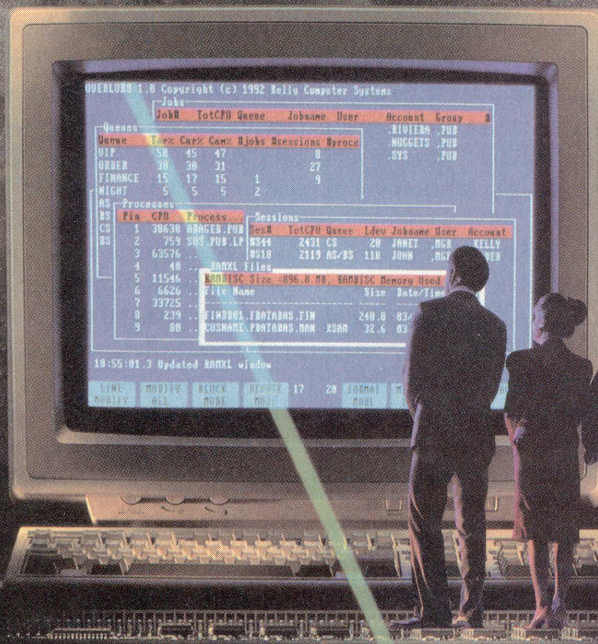
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make TurboIMAGE equal to a relational database in the sense of b-tree access. There's still no language in SQL to fully support textual searches. You will still need to use indexing software to obtain those features.

Relational index access provided through SQL by the major relational databases is essentially b-tree or generic key access. But it constitutes only a small percentage of indexing's value. Standard SQL doesn't provide any optimized way to use full keyword and multiple, or joined retrievals, phonetic searches, or even case-insensitive searches. There's an SQL standard full-text query language under development, but we haven't seen any indication that it will become an SQL standard any time soon.

It's important for database managers to pay attention to exactly what IMAGE/SQL gives them. It can give them only a subset of the capabilities available through third-party indexing because of the inherent limitations of SQL. This isn't to speak poorly of IMAGE/SQL. Customers will need to assess what their data access requirements are and compare that with what IMAGE/SQL and the TPI provide. If they need additional retrieval flexibility, they'll want to look for an indexing system that they can use to enhance SQL's capabilities.

Tashenberg: I have to disagree with Eric on what the addition of an SQL read/write interface means for TurboIMAGE. We feel IMAGE/SQL, which offers all five of the accepted ways of retrieving data (serial access, random access, algorithmic access, pointer linkage access and indexed access) is much better than a conventional relational database because now the users and ISVs have more choices.

For example, soundexes (searches for homonyms) and keywording, which Eric mentioned, aren't readily available on other relational technologies, but they are available on IMAGE right now. The keywording capability has been standardized for IMAGE through third-party indexing, and Boolean searches (AND, OR, NOT) are a standard part of SQL.

There are many things, in fact, that will make IMAGE/SQL (with the TPI) better than other relational databases, and these advantages will benefit the HP 3000. Depending on the implementation of IMAGE/SQL (the first release can't be expected to fully support the TPI), as IMAGE/SQL grows and the demand for it grows, demand for the HP 3000 will increase.

IMAGE/SQL vs. ALLBASE/SQL

Marks: Jim, do you have any idea how IMAGE/SQL using a third-party indexing product would compare with ALLBASE in performance?

Sartain: It would depend on what you were doing. We haven't had an opportunity to benchmark ALLBASE indexes against third-party indexes on IMAGE/SQL. And there's also the question, as Eric has suggested, whether IMAGE would be taking

full advantage of third-party indexing capabilities. Ultimately, we'd like to use OMNIDEX and SUPERDEX b-trees and have those be analogous to a complete relational solution. Once we have that in place, we'll do some benchmarking and make some comparisons.

As Eric mentioned, there's no concept in the SQL language of a keyword lookup. There is work going on to extend the SQL standard to include these concepts. The reason it's important to extend the SQL language is because more and more, people won't be writing SQL statements, they'll be using tools that know SQL. Every tool will need to write to one standard language. It's critical for that language to evolve to include things like keyword lookups and other special types of lookups. It's critical that the tools evolve to take advantage of those new constructs and that IMAGE/SQL evolve to take advantage of them as well.

For now, though, there's so much benefit people can obtain from the basic index types and basic SQL tools that they should start moving to IMAGE/SQL.

Marks: That's an interesting response. I had thought that HP had done some benchmarks — I guess they compared straight IMAGE/SQL (without indexing) versus straight ALLBASE?

Sartain: We have done some read-access benchmarks, comparing, say, accessing an IMAGE data set through IMAGE/SQL versus accessing, say, an ALLBASE table, where both are indexed similarly. In those cases, the access time is fairly similar.

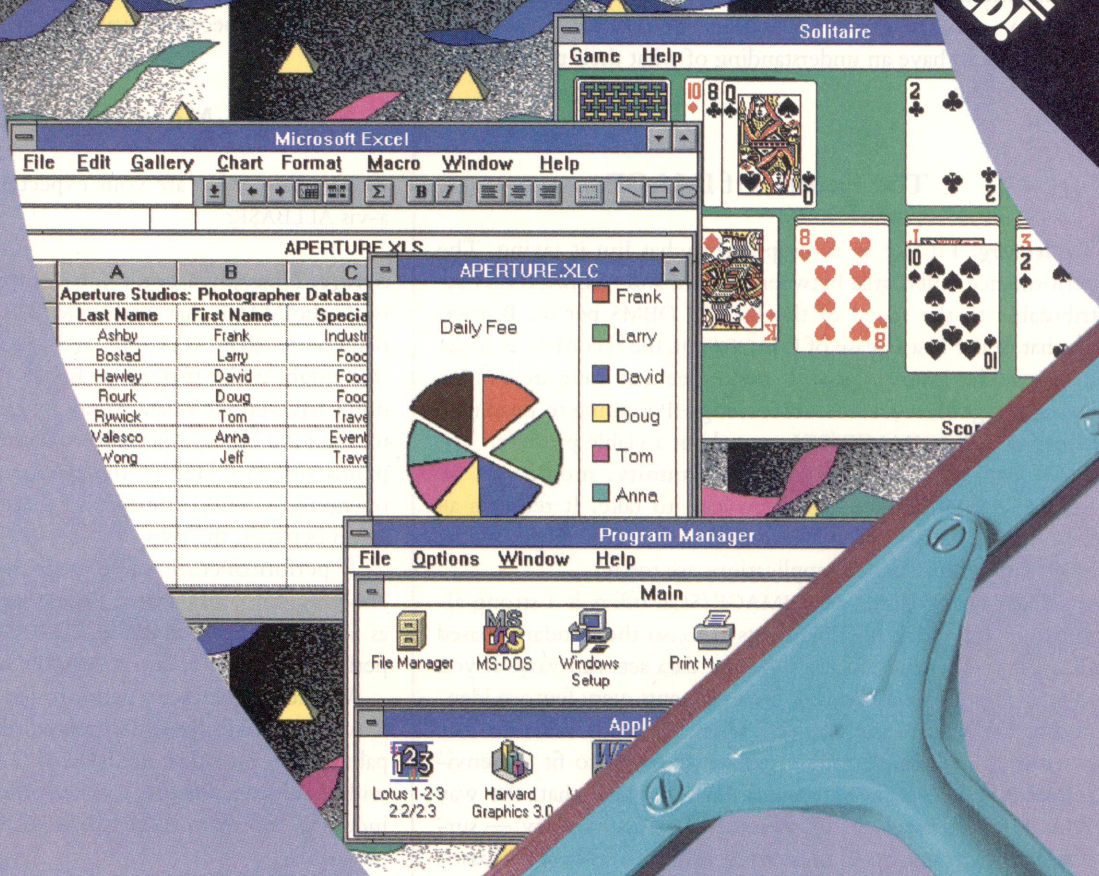
The one thing that people have to think about with the first release of IMAGE/SQL is that if they're in an update-intensive environment, ALLBASE provides more granular locking capabilities. In particular, IMAGE/SQL will support only data set-level locking, not record-level locking. If you have a large number of users in a high volume SQL OLTP environment, then you may begin to see a performance advantage for ALLBASE.

Tashenberg: What number of users would have to perform simultaneous updates to the database before this performance differential would be observed?

Sartain: It would depend on the type of transaction. We've got various benchmarks — some are on-line benchmarks, some are batch benchmarks.

For example, if you had 30 processes on a 967, 30 batch processes, all running an update-intensive application against the same database, you might start to see some serialization. As far as on-line access, since you have think time, you would require a much larger number of users before you would recognize a meaningful difference. But that's something we're in the process of characterizing as part of our testing effort for the write-access version of IMAGE/SQL. We'll provide that data to customers, so that they can make informed decisions about implementations of ALLBASE/SQL.

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What we usually say to IMAGE customers about this issue is: Imagine that you were to use set-level locking in your application — that's a pretty well understood concept — and most customers can have an understanding of what their performance would be like.

The Future Of IMAGE

Tashenberg: I'd like to re-emphasize what Jim is saying. The performance differential between IMAGE and ALLBASE isn't attributable to the speed of the IMAGE DBMS per se. Rather, it's that in the first release of IMAGE/SQL the record-level locking capability is not present. I can foresee that there are a number of things like record-level locking HP is going to be almost forced to add to IMAGE/SQL to make it a viable product.

Of course, for the IMAGE community, moving to an ALLBASE solution can be a little hard to take. It requires all new programming and all new data conversion to get to the level where their IMAGE applications are today.

That's why I think what IMAGE/SQL offers is a strong alternative approach. It implements SQL, so the standards-based access is there. Underneath SQL, the data sets can vary. If you look at the relational database environments, very few are identical at the level of the data set. There are many different data structures, and people choose whatever seems to fit the environment. One of the advantages IMAGE has is that, the way IMAGE is structured, it offers tremendous accessibility — surpassing the capabilities of most conventional relational databases.

There was an interesting article that appeared in *Byte* magazine in May of last year, called "Two Steps Forward, One Step Back." It talks about the lack of performance delivered by the relational database model, and what many people are considering doing now, the article suggests, is moving back to the network database model and adding the relational components onto that. Doesn't that sound very similar to what HP has done with IMAGE/SQL? This is where the industry is going, and it seems that HP is ahead of the curve. (*Editor's Note:* See "Two Steps Forward, One Step Back—Building Real World Applications Requires A Move Beyond Relational Databases" by David Vaskevitch in *Byte*, May 1992, v17 n5 p. 141).

Sartain: We very much believe that we can stay ahead of what customers need in terms of performance for IMAGE/SQL. I fully expect that most people who use IMAGE/SQL will initially be using it in a read-only environment. They'll be using it for a decision support application or for offloading some work to a PC or other computer on a network. Some will begin to do some OLTP, but they'll start out with low- and medium-volume applications — basically, low-volume update modules. With our phased implementation approach, we anticipate we'll be able to stay ahead of these users' needs.

We also want to set expectations properly about what sort

of performance people will get at various stages of this product life cycle. We'll be showing more data about IMAGE/SQL performance as it becomes available.

More Sibling Rivalry?

Marks: Eric, what are your expectations for IMAGE/SQL vis-a-vis ALLBASE?

Savage: Honestly, I don't know. I think there are some aspects of TurboIMAGE that enable IMAGE/SQL to perform substantially better than ALLBASE, and I see some things in ALLBASE that might make it perform better than IMAGE/SQL. I really don't have enough data to say whether one will perform better than the other, especially concerning OLTP where a lot depends on how tightly the database is integrated with the operating system. I suspect that there will be a healthy competition between the two.

If performance is supposed to be a determining factor in choosing one or the other, I don't see IMAGE performing twice as fast or ten times as fast as ALLBASE. Nor do I see ALLBASE performing twice as fast as IMAGE/SQL.

Where you will see a performance improvement on that scale is with the addition of full keyword and joined searching capabilities — on either ALLBASE or TurboIMAGE. I can say that with confidence because I've seen the performance benefits that indexing affords to ALLBASE/SQL, Oracle and other database platforms.

Tashenberg: In our performance tests, which we've done with IMAGE 4.0 versus ALLBASE, we've seen relatively similar results from both databases. In SUPERDEX using IMAGE 4.0, if a user performs a date-range retrieval, for example, and they're retrieving 50 percent of the records or less, they're going to gain by using indexing rather than serially reading the data. If, in the case of the record-locking consideration that Jim raised, where you're losing somewhere between 10 and 30 percent of your IMAGE performance to IMAGE/SQL, then you'll make up the difference by using indexing and taking advantage of the IMAGE TPI interface when it becomes available.

Marks: You would argue, then, that from a new HP 3000 customer's perspective — and certainly from an existing TurboIMAGE user's perspective — that IMAGE/SQL rather than ALLBASE should be the database platform of choice?

Tashenberg: To me, there's no question. Whether you're upgrading to a larger box, or converting from a non-HP box, you now have a POSIX-compliant system with a reliable, SQL-standard database. This allows your transaction-type data to reside on the HP 3000 in IMAGE/SQL, while bit-mapped or document data resides in ALLBASE or on a PC server in another data

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structure. You can now buy a single off-the-shelf PC-based software package for accessing and updating IMAGE/SQL transaction data and ALLBASE or PC-based bit-mapped data. So, for transaction-type data IMAGE/SQL is a clear-cut choice.

Marks: Eric, I suspect that you don't see it as quite so cut and dry.

Savage: Actually, I do agree with Brad that IMAGE is a very fast database, and the tools available for IMAGE make it very powerful. So, I don't disagree, it's just that I think people are going to want a lot more.

The main benefit of IMAGE/SQL is that it provides you with standards-based access to IMAGE databases — it allows you to use SQL as the front end. That the database is TurboIMAGE doesn't really matter anymore from the application's perspective. It's just looking at SQL.

The issue I see, however, is that people want immediate access to their data, and there are deficiencies in SQL. No matter what we do with IMAGE/SQL and the TPI, it's not going to provide all of the things that users want. The power of third-party indexing, the performance capabilities, textual searches, the windowing interfaces, etc., all get at what the customer wants. Of the solutions available, does IMAGE/SQL compare favorably with Oracle or ALLBASE? I think it will. TurboIMAGE is one of the most reliable databases I've ever come across. But IMAGE/SQL is not necessarily going to solve all of the problems or satisfy all of the desires customers have.

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Also, many customers don't operate in an exclusively HP environment. They may have AS/400s or VAXes or UNIX platforms other than HP-UX. In some cases, the executive office has dictated to the MIS department that the company will use relational databases on UNIX platforms. We feel we have to address those users as well. We believe very strongly in the advantages IMAGE offers, but there are customers that for internal reasons have to use other database platforms. Indexing technology is certainly as valuable, if not more valuable, on those platforms as it is on TurboIMAGE or IMAGE/SQL.

Tashenberg: Let's remember, too, that we're comparing the first release of IMAGE/SQL with relational databases with multiple years of development. I see in the future that IMAGE/SQL will allow you to add and drop "tables" and, even today, with SUPERDEX we allow you to add and drop indexes on the fly. HP has said they're going to look at the record-locking issue, and they're trying to keep up with performance demands right now. I think today IMAGE/SQL is as good as what most people want in a relational database and in the future it will continue to be ahead of its time.

Marks: Jim, is there a competition shaping up within HP between ALLBASE and IMAGE/SQL?

Sartain: No, not really. In fact, the two products are complementary. Users might want to implement applications that store some information in ALLBASE and some in IMAGE/SQL, and both databases could be used in a coexistence environment. At least initially, IMAGE/SQL will not have the same level of concurrency as ALLBASE, so there could be examples where somebody might want to use ALLBASE for some tables and IMAGE for others.

The IMAGE and ALLBASE teams, of course, work in the same labs for the same managers. We're all excited about IMAGE/SQL, and we all believe that it's a great way to get IMAGE customers using relational technology. We believe that a lot of those customers will determine that they want to have ALLBASE as well as IMAGE/SQL.

Marks: Your goal then is to provide as much functionality and capability in both databases as you can and leave the choice up to the customer as to which database they want to use?

Sartain: Yes. We believe that when people look at the price of ALLBASE, they'll see great value there for the money. And IMAGE/SQL is a must for those who have IMAGE databases. There's not much competition here really; it's a win-win situation, for the customers and for HP. ■

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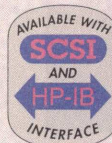
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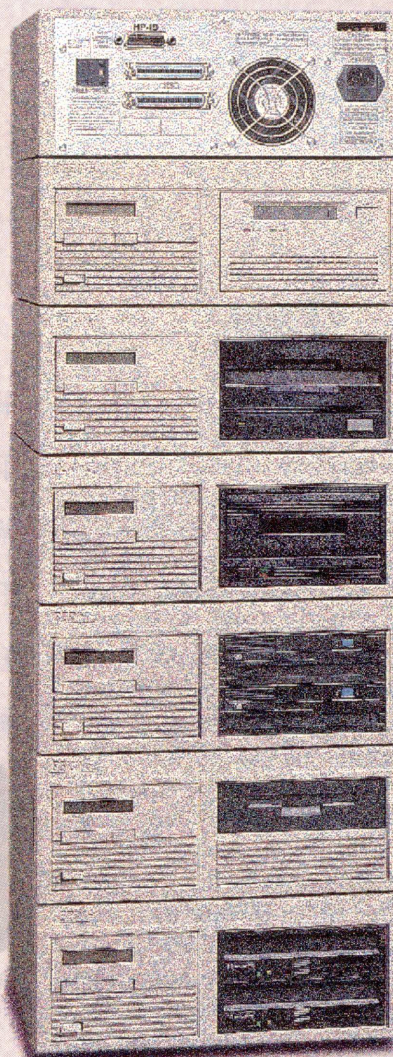
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Five years ago, it was system hardware that posed the biggest obstacle to advances in scientific visualization software — but not any more. Faster and cheaper RISC workstations, like HP's 9000 Series 700 systems, are setting the pace for a rapidly expanding scientific visualization market. To capitalize on this trend, software developers have made visualization software easier to use by implementing mouse-driven, point-and-click interfaces, pull-down menus, icons, dialog boxes, on-line help facilities and keyboard accelerators. And, by doing so, they've reached a new breed of user, the non-programmer.

Today's scientific visualization products are poised to capture two times the growth potential of all computer graphic applications, and are reaching the hands of the non-specialist thanks to more effective and powerful workstations and spectacular output devices, according to Carl Machover, president of consultancy Machover Associates Corp., White Plains, NY. Estimated to be a \$1.5 million market in 1992, the scientific

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visualization market, Machover expects, will reach \$4 billion by 1997, representing a compound annual growth rate of 22 percent.

Simply put, scientific visualization allows users to see the previously unseen. Unlike imaging software, which only works with data from real life sensors, such as satellite data, for example, and then analyses that data, scientific visualization software also can use simulated data to present visual images of possible objects and relationships.

Dr. Ed Flynn, laboratory fellow at Los Alamos National Laboratory in New Mexico, for example, runs scientific visualization software from Research Systems Inc. (RSI; Boulder, CO) on an HP 9000/720 and 735, to understand how the brain works. Called magnetoencephalography, Flynn's research incorporates visualization to determine not only the physical attributes of the human brain but also its functionality.

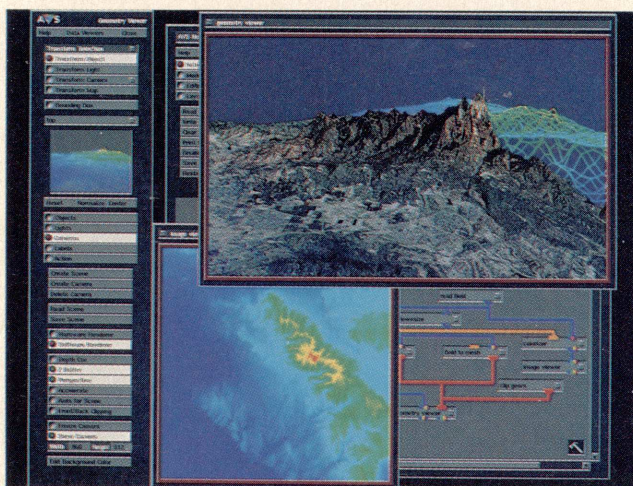
More than half-a-dozen vendors offer scientific visualization software for HP users. Some companies include Advanced Visual Systems Inc. (Waltham, MA), DSP Development Corp. (Cambridge, MA), IBM Corp. (Yorktown Heights, NY), Mathworks Corp. (Natick, MA), SpyGlass Inc. (Savoy, IL), Visual Numerics Inc. (formerly known as Precision Visuals Inc.; Boulder, CO) and Wavefront Technologies Inc., (Santa Barbara, CA).

A Closer Look

INDIVIDUAL VISUALIZATION projects may involve smaller 2-D data sets or larger 3-D data sets. Available products vary with low-end solutions offering strong plotting capability for 2-D images while high-end solutions can manipulate 2-D as well as 3-D volume visualizations.

Transform from SpyGlass is a visualization product designed to analyze 2-D data and images. According to Brand Fortner, director of research and development, the goal of the company is to develop easy-to-use products for use with large amounts of data. "We have customers who want to see data now," he says.

Unlike more sophisticated products that offer users an environment designed for customization, Spyglass is for those who want to see images without the need to program. Product features include raster images, surface plots, contour plots, vector plots, overlays and analytic functions, according to the company. Priced at \$895, Transform runs on HP 9000 machines.



Isometric view of Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) shown in Advanced Visual System's AVS.

Hal Elgie, vice president of RSI says that Transform is a powerful solution for simpler imaging projects. "SpyGlass allows users to do 70 percent of the [tasks] they need to do without programming," he says.

DSP's DADiSP/PRO-32 is also designed for users who don't have the time or know-how to write programs. Recent product enhancements include faster image screen displays and mouse-driven rotation of 3-D plots. The product is priced at \$4,495. A version of DADiSP designed expressly for visual analysis of financial data is also available. Known as EXPO and

marketed by DSP Development Corp. subsidiary Leading Market Technologies, it allows stock traders to graphically monitor and analyze real-time and historical market data via predefined menus, graphics and analytics.

Also, MathWorks recently announced MATLAB Version 4.0 for HP 9000 Series 700 computers. New functionality for this product includes object-oriented graphics, sparse matrix support, sound output and customizable user interface controls, according to the company. Software for HP-UX workstations is \$2,995 — and users needn't be mathematics majors to use even the most sophisticated of MATLAB's analytical tools.

As visual data analysis technology improves, Elgie contends, vendors are giving users more capability for their money. As one example, he cites RSI's more sophisticated visualization solution, called IDL, which has been enhanced with new functionality including IDL/widgets (a toolkit for developing Motif and OPEN LOOK graphical user interfaces), IDL/statistics (an extensive library of statistical routines), IDL/gridding (for fitting surfaces to irregularly gridded 3-D data points) and IDL/3D (a tool that incorporates capabilities for true 3-D visualization).

IDL currently lacks real-time rotation capability but Elgie says the company is working on it. The cost of IDL for workstations is \$3,750 for a floating network license and \$3,000 for a single-user node-locked license.

Other companies are also working to make their most sophisticated visualization solutions easier to use. Machover notes that the recent merger of ISML Inc. and Precision Visuals Inc. to form Visual Numerics represents the creation of a new powerhouse in the scientific visualization market. ISML's expertise is in application development tools while Precision Visuals' main talent is in visual data analysis (VDA), an area where its PV-Wave Point & Click product has been successful. Together, Machover says, the two could deliver highly robust yet easy-to-use visualization products.

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**Noting that the high-performance
HP platform offered an excellent match
for its Visual Data Explorer (VDE) software,
IBM recently ported its product to
the HP 700 series.**

Ted Charter, chief operating officer at Visual Numerics says, "The merger of the two companies gives us the opportunity to introduce a family of visual data analysis products that can concentrate on specific industries." One of the company's goals is to expand the VDA market by developing families of products that address the unique requirements of users in vertical markets. Charter believes that today's visualization customer is more sophisticated and aware of what he wants in a product. "Workstation performance improvements have pushed the boundaries of what we can offer. Users can now analyze and model the majority of their problems," he says.

Visual Numerics offers PV-WAVE Command Language Version 4.0 for \$4,950 for a single floating license. A single user, node-locked license is also available, and is priced at \$4,500. PV-WAVE Point & Click 2.0, which offers a more intuitive visual data analysis product for the non-programmer, is priced at \$2,495 for a single floating license.

Advanced Visual Systems offers scientists a building block approach to accomplish data analysis and graphics modeling. A comprehensive visualization environment, AVS is designed to meet the requirements of users looking for good visualization capability within the context of their own discipline, according to Ian Reid, vice president of marketing at AVS. Reid believes that the computing and graphics capability, together with the aggressive pricing of HP's 700 series, will garner for HP a larger portion of the scientific visualization market than it has ever held.

In support of Reid's claims, HP's Steve Gottschalk, scientific visualization market segment manager reports that at year-end 1991 the scientific visualization market represented almost \$750 million to the company. He anticipates a growth rate of about 12 percent to 14 percent in 1992 or approximately a 7 percent market share. "The 700 series is the platform of choice

in this market because of its speed, performance, and I/O and networking capabilities," says Gottschalk.

Noting that the high-performance HP platform offered an excellent match for its Visual Data Explorer (VDE) software, IBM recently ported its product to the HP 700 series. VDE is designed for users with large, 3-D data sets. According to Eric Rosencrans, marketing manager with IBM, recent product enhancements have been made in the areas of data importing, improved user interface and enhanced module functionality. A single workstation license for VDE is \$5,900.

Best known for its association with the entertainment industry, Wavefront Technologies' Data Visualizer is a 3-D product for scientists with medium-sized data sets, according to Mike Wilson, engineering marketing manager. Jim Burnetti, a member of the technical staff at Mitre Corp., McLean, VA, uses the Data Visualizer for hazardous waste site characterization work. "Where obtaining data samples gets very costly, visualization software combined with earth science software allows us to take a few samples and generalize about a larger area," says Burnetti. "The visualization software also allows us to present the data to the non-scientist," he adds. —*Lynn Haber is a freelance writer specializing in communications and computing technology, based in Boston, MA.*

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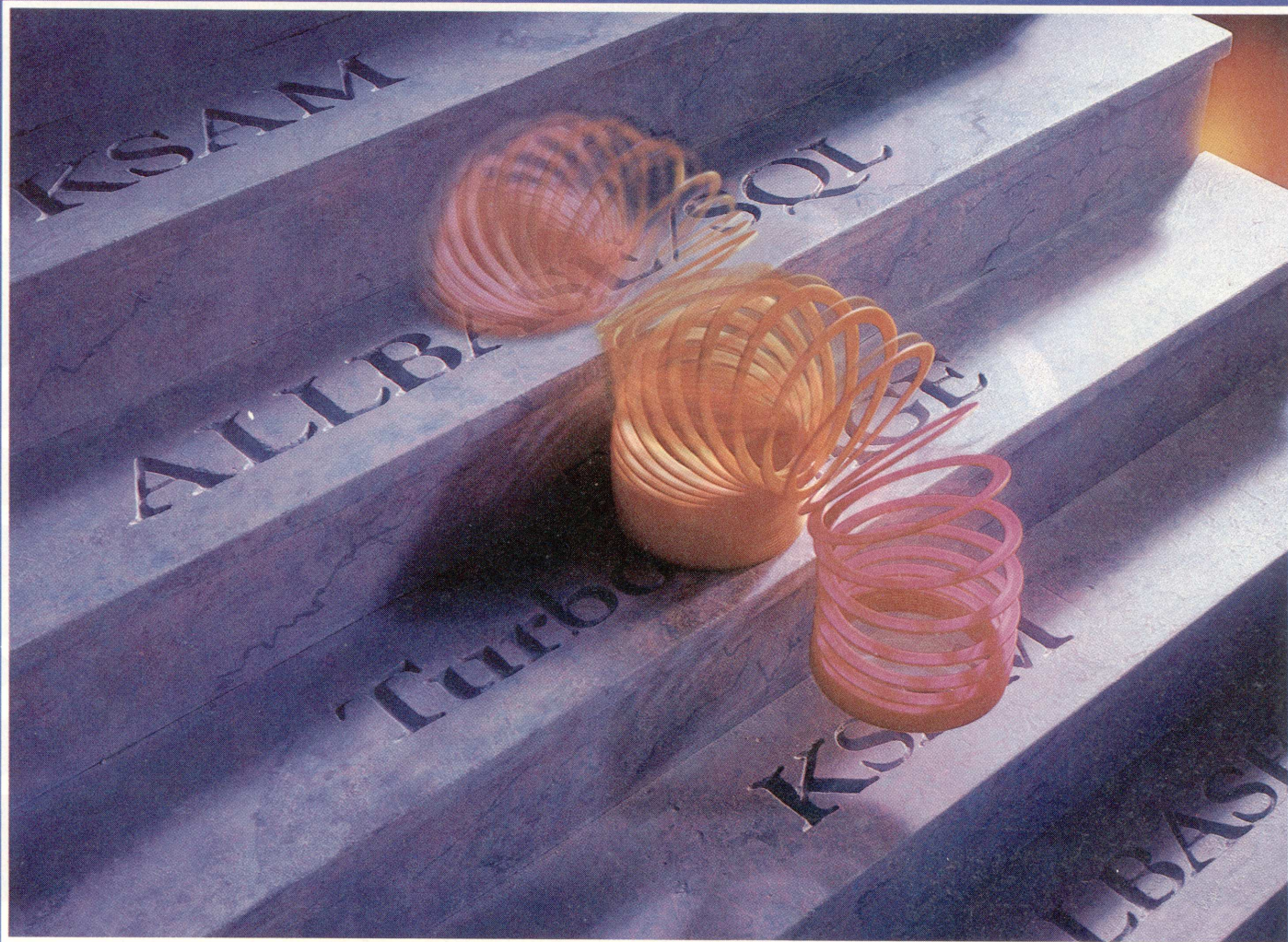
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CIRCLE 153 ON READER CARD

Does Multimedia Matter?

**HP's New MPower Product And Other
Successful Network Applications Show
Multimedia Can Work, But Corporate
Customers Remain Skeptical**

In a *ComputerWorld* commentary not long ago, that publication's executive editor, Paul Gillin, took a shot at multimedia technology. For some, or maybe even most of the marketplace, he's right: "Multimedia is about as important as mouse pads on the list of pressing corporate buying concerns."

But multimedia technology has been kicking around long enough that it ought to be through with its footloose, adolescent days and about ready to get something accomplished. How many times have you seen it wielded like some opening-night beacon at trade shows, flung in your face to get your attention, only to realize too late that all the flash and dazzle comes down to a gimmick to sell overpriced mouse covers? Fortunately, even while some carnival-style barkers cling to their gim-

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micks, multimedia is maturing. For users with certain kinds of problems and using particularly capable solutions, like HP's new MPower environment, effective multimedia that makes important contributions to getting real work done is possible today.

MPower incorporates a broad set of obvious multimedia functions, including video, E-mail and fax, with nifty new things like a Shared WhiteBoard that lets multiple users at remote locations make annotations to the same document or image, while yakking about it over an audio connection. MPower integrates all of these technologies, and some others, into a consistent user environment. But don't just take my word for it — ask Joel Margoese, manager of product marketing at Xerox Imaging Systems, Peabody, MA.

"One problem I encounter is moving information between different formats like fax or E-mail," says Margoese. "Manipulating it is always a challenge. And it's not just the information that has value, but the format itself that conveys a lot of information. MPower allows you to keep that format. It's better than anything else I've seen on a UNIX workstation because it's integrated and easy to use. And it's [made] clear up front that this is an extendable architecture — you can add things to it," he says. And what Margoese wants to add to MPower is his company's imaging product — discussions about this are in the early stages.

MPower To The People

STILL NOT CONVINCED? PERHAPS you'd rather hear from MPower user Bill O'Brien, manager of transport and data systems at Bell Canada's Network Control Center, Ottawa, Canada. O'Brien's team looks after the safe-keeping and feeding of the phone system switches and networks for two entire area codes — a massive, complex task that covers a large region. Before MPower arrived, O'Brien was in the midst of studying a series of different systems "to track alarms and create trouble tickets and background maps." Creating new systems to simplify troubleshooting efforts looked like a very difficult task.

At the time of this interview, O'Brien's workers had been experimenting for less than two weeks with a beta test version of MPower. "MPower allows us to pull down CAD diagrams showing geographic areas and cable layouts for the region," says O'Brien.

We can pull down a map and zoom into any section, and that has a major significance for us. Now we'll place icons on these maps representing our equipment; and on receipt of an alarm, the workstation will change the color of the icon so we can see it easily. When we click on the icon, the system will create a trouble ticket detailing the problem. We want to get away from text-based maintenance to visual systems. MPower makes that easier, and we've only had it a week and a half. It's created a lot of excitement around here," O'Brien says.



MPower, HP's new HP-UX-based client-server multimedia environment.

Beta test versions are seldom all sweetness and light, however. O'Brien's team found one problem that HP is fixing. To make it easy for customers to configure systems using small systems for the client units in an MPower network, the default configuration for this early version threw most of the computational load on the server. When Bell Canada fired up MPower to serve a large network of high-powered HP workstations, the company quickly found its server staggering under the load, while HP 720 client workstations in the hands of users skipped along using a scant two percent of their capability.

"We kludged around the problem for now, and HP is fixing it," says O'Brien. Ken Severson, section manager in HP's Multimedia Technology Lab, explains that the default configuration launches applications on the server, making little use of the client workstations. "Now we've made MPower more flexible so the home directory can be either on the client or on the server to allow users to tune their environment," says Severson.

"The most important thing in maintenance centers like mine is the human interface," says O'Brien. "You have to work at that system all day long. MPower creates an environment that makes some of the mundane work more like playing computer games, so your total time is spent doing the job. And making the job more fun can be translated directly into greater productivity. The potential is phenomenal."

The Bandwidth Barrier

MPOWER MAY BE ONE of the most sophisticated multimedia products to come along so far — and certainly it's the first full-featured multimedia environment for HP-UX, but there are literally hundreds of other multimedia options beginning to come of age. As its boosters will tell you, all things are possible in the wide-world of multimedia: from glorified text files to full-motion, full-frame video. It may cost you a bundle, but you can do just about anything you want — from your standalone workstation or PC.

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However, system requirements expand by an order of magnitude when the application requires networking. Multimedia applications running across LANs or WANs can test the strength of the network if the application involves audio, or particularly video, in any volume. When investigating these solutions, testing the networking expertise of multimedia vendors is the best way to separate the heroes from the hucksters.

If some people, like O'Brien at Bell Canada, have networked multimedia systems in place, why don't we see lots more? It all boils down to bandwidth — we just don't have enough to suit many multimedia applications. Video running at a full 30 frames per second with 320 by 240 screen pixels requires 2 Mbps of bandwidth. Standard Ethernet LANs provide a total bandwidth of 10 Mbps. It doesn't take a rocket scientist to see that running a constant stream of video over the network will reduce a LAN that serves 10 users for typical commercial applications to no more than five users for video.

Meanwhile, flashy high-end multimedia exploits by some vendors imply that 100-Mbps Ethernet, with its attendant upgrading costs, is the only way to go. In some cases, there is no choice but to spend the money and upgrade, but alternatives are coming even for those who must go beyond standard Ethernet LAN performance.

Among the alternatives is Asynchronous Transfer Mode (ATM), a cell-relay protocol for broadband ISDN that strips down some of the routing and error checking in favor of higher bandwidth and faster switching. ATM products are starting to appear and bear watching if you are sorely in need of increased bandwidth. However, the products will be costly because the technology is in its early stages.

Frame Relay makes similar trade-offs to speed the X.25 packet-switching protocol for improved performance, designed

for 64 Kbps to 2 Mbps. This technology is available now using T1. Switched Multimegabit Data Service (SMDS) is still another option that uses the 802.6 media access control protocol, with speeds ranging from 1.5 Mbps to 45 Mbps. Meanwhile, Microelectronics and Computer Technology Corp., a research and development consortium, has launched First Cities, an effort to develop a vendor-neutral multimedia delivery architecture.

With all the fireworks in the multimedia field, ordinary people trying to solve their business problems have a tendency to get confused. Should you tough it out on standard Ethernet using hubs, switches and slick software to get the most out of what you have, or should you make the move to something new? If you want to make the change, should you go for FDDI, ATM, Frame Relay, SMDS or First Cities — or do you just go for a walk to buy antacids?

One reason for the cautious approach most corporate customers take to multimedia is the high cost of increased bandwidth solutions. Other factors include the lack of firm network standards and the difficulty of making emerging technologies like these work. A project designed to implement a bleeding-edge multimedia application across an untried networking platform isn't the cost-conscious corporate manager's idea of a smart investment. While HP's MPower and other successful network solutions have proven that multimedia does matter, and will likely become increasingly important in the future, until more applications stabilize and bandwidth problems are sorted out, a healthy skepticism is probably well-advised.

— Don Marks contributed to this article.

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HIGH-TECH HYBRID: THE PRODUCTS BEHIND MPOWER

HP's MPower environment actually consists of numerous component applications integrated to create a multimedia "platform" that can also accommodate third-party solutions.

Multimedia Mailer: HP Multimedia Mailer allows audio, image and video frames to be included within an E-mail document.

HP SharedX: Most X-based applications offer real-time sharing between remote users located anywhere in the world through HP SharedX. Only the sender needs to run SharedX, all other users can communicate via X terminals or PCs running X terminal emulation software.

Shared WhiteBoard: The Shared Whiteboard allows users to capture a screen image and share it with other users. Annotations of screen images in real time as they appear on each end users' screen are transferred via fax, E-mail or printed.

Audio: MPower allows users to play, record, copy and edit audio files with an added capability of recording or playing audio directly from an audio device without having to use data files as conversion filters. Users can add audio to E-mail text messages.

Images: MPower users can view and manipulate images such as FAX messages as well as standard industry image types such as GIF, TIFF, JPEG, Postscript objects, Starbase, Xwd, Xbm and Xpm.

HP DeskScan/UX: Users can scan, view, manipulate, store and print high-resolution color and monochrome images with the addition of the DeskScan/UX software. Combined with the FAX features, users can scan in an image, make necessary changes and then fax the image to other users.

HP SharedPrint/UX: SharedPrint/UX allows users to print color, text, graphics, and images to any printer on a network through drag and drop manipulation. SharedPrint/UX allows users to print to both PCL or PostScript printers with automatic conversion provided.

HP RasterOps VideoLive: In conjunction with the RasterOps VideoLive EISA board, users can view live full-motion video within a window on the desktop. RasterOps VideoLive supports video input from TV tuners, VCRs, camcorders, RGB cameras and medical scanners.

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M.B. Foster Associates' DataExpress Couples Data Extraction And Reporting Tools For Quick Access To Useful Information

Having made stops in more than 1,000 systems, DataExpress has been on the data extraction track since the mid-80s. It originates from IMACS, the same company that produced the RAPID prototyping products — the most popular being TRANSACT — which were acquired by HP. M.B. Foster Associates acquired DataExpress in September of 1989 and continues to develop it as an end-user data access tool.

DataExpress makes it possible for you to selectively and rapidly extract data from HP 3000 data structures, manipulate, calculate, summarize and reformat it, then download it to a MAC or PC or report it to a file or printer.

The engine of DataExpress is the DataExpressCenter (DXC) program. DXC runs with basically the same functionality on either the Classic HP 3000 under MPE V or in native mode (NM) on the PA-RISC HP 3000 Series 9xx under MPE/iX. The NM version is not just a recompile, however. It's been engineered to take advantage of MPE/iX features to achieve maximum performance.

Optional DataExpress modules (packages) include:

- DataCatalog and ManagerPlus for customizing the user environment and control of system resources.
- POWERHOUSE, HP Dictionary and Relate/3000 interfaces.
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John P. Burke



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DXC works with all MPE file types including: IMAGE databases, KSAM files, MPE sequential files, MPE SD files and DataExpress subfiles.

DXC can directly interface with PC or HP 3000 applications, producing output files in 29 special formats including: Lotus WK1, WordPerfect 5.0, dBase DBF, Powerhouse subfile and straight ASCII. It also can produce standard, formatted report listings, although that's not its greatest strength. In an initial test, I extracted more than 600 lines of data from an IMAGE database directly into a WK1 format file, downloaded it to my PC and restored it into Lotus 1-2-3 all within a few minutes.

Fuel For The Engine

If DataExpressCenter is the engine of DataExpress, then Procedures, which are like low-level scripts, provide the fuel. You create Procedures in DXC using an easy-to-navigate, menu interface. The interface "remembers" the last Procedure

worked on, allows you to back up one prompt by keying in /, makes extensive use of function keys, and contains two levels of on-line HELP (? for a short message and ?? for a more extensive message). Options are available for customizing menu appearance.

A Procedure may use a single IMAGE dataset or MPE file or may access complex data combinations. Procedures are stored in a catalog file that serves as a library. Utilities are provided for maintaining catalog files and copying procedures between catalogs. Procedures can have titles, passwords and various levels of security.

Basic IMAGE definitions are obtained directly from the root file, while KSAM and MPE file definitions may be entered dynamically as part of the procedure or created for later use by the file definition utility DXFDGEN. Optional interfaces also exist to Powerhouse and HP Dictionary.

Computed fields (numeric and string) can be defined and even may be used as

WHAT'S IN A NUMBER?

We used Version 1.72 for our test. By now, version 1.73 should be in general release. Key enhancements in 1.73 include:

- Selection of records based on the comparison of two fields.
- Support for named and unnamed temporary files for multipass or drill-down processing.
- The new utility DXINFORM to convert Inform reports to DataExpress procedures.
- Support for Allbase/SQL in a stand-alone mode.

At the ICMS in Seattle, M.B. Foster Associates expects to demonstrate a new "windowed"-interface for DataExpress. While still terminal based, it has been designed with future migration to a client-server environment in mind.

sort keys in procedures. If data is already in the correct order, a flag can be set to suppress the sort while still processing sum-

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VISIMAGE, the technology leader in report writing for end users and MIS professionals is now released on UNIX. The same power and ease of use that have made VISIMAGE an outstanding success in the HP 3000 (MPE, MPE/XL and MPE/iX) marketplace are now available to users of HP 9000 (HP-UX) systems. VISIMAGE provides an open systems environment that allows multi-system access through a single user interface. Built upon client-server technology*, the combination of VISIMAGE on the PC and ASKPLUS on the host provides a user interface that is second to none. Along with IMAGE and KSAM, ASKPLUS supports ALLBASE, ORACLE, INFORMIX, INTERBASE, ELOQUENCE and C/ISAM with more relational databases to be added soon.

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maries at level breaks. Selection values and output formats can be hard coded into a procedure or prompted for at run time.

One feature that stood out in our tests was DXC's excellent date handling facility. It easily processed the various date formats that exist in our systems. Another feature I found particularly useful was the DataExpress subfile, an MPE self-describing (SD) file that can be generated and used in multipass applications. It contains a user label describing the fields and attributes such as decimal precision, edit mask, menu name, etc.

Two optional DataExpress modules deserve special attention:

DataCatalog: This is a "must" option. It can create table "views" of complex data structures with predefined naming conventions (item, prompt, header), links, edit masks, etc., shielding you from the underlying messy detail and obscure names. Also, with "secured fields" you can restrict a user(s) to only those entries with values matching ones you have pre-

defined. For example, you could create different logical views of sales data based on the value of sales territory.

ManagerPlus: The System Administrator (SA) can optimize the use of available resources and establish additional security levels for individual users.

Reading Material

M.B. Foster Associates takes justified pride in its documentation and detailed on-line HELP. The manual for DataExpress is a somewhat intimidating document. But don't worry, the on-line HELP is so good and complete (with two levels of context-sensitive HELP) that you'll only need the manual as a reference. I was able to create data extraction procedures from my favorite databases without ever cracking the book. When I wanted to do something a little trickier or needed to do some system administrator tasks, the manual was there, complete and easy to use.

The Version 1.73 Supplemental Docu-

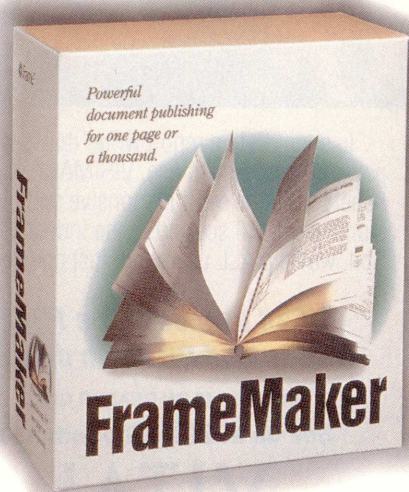
mentation was available long before the actual product was in general release. The documentation served as the specs. Too bad more vendors don't follow this approach.

Supplementing the manual are the IMACS IDEA BOOKS that describe scenarios using DataExpress. While probably originally designed as sales literature, they give the HP 3000 user all the introduction necessary to get started with DataExpress.

The new user is also aided by a series of on-line tutorials created using a feature made available to all DataExpress customers: Your keystrokes can be saved to an EDITOR file, combined with some special comments and used as input to DataExpress, thus creating your own customized tutorials. Nice.

DataExpress is an easy-to-learn and easy-to-use tool that empowers even the casual, unsophisticated user with sophisticated data access and extraction capabilities. ■

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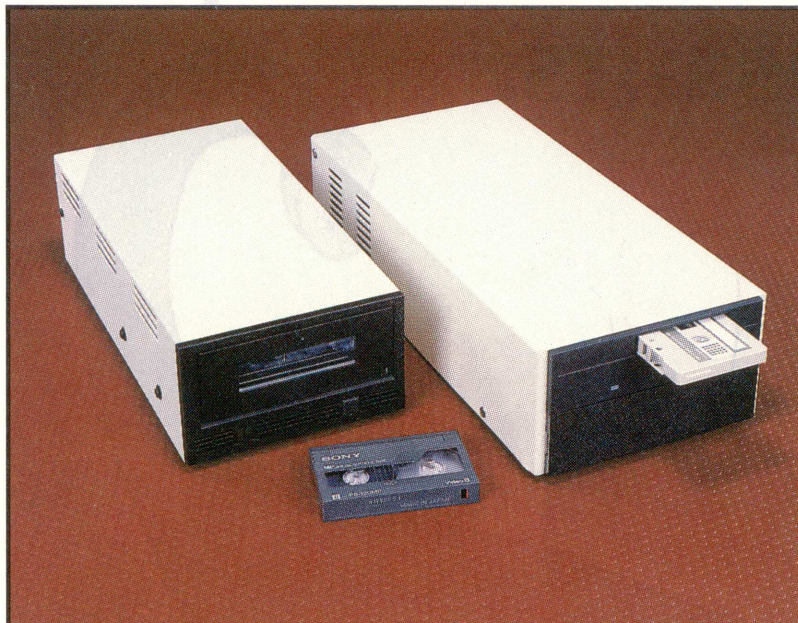
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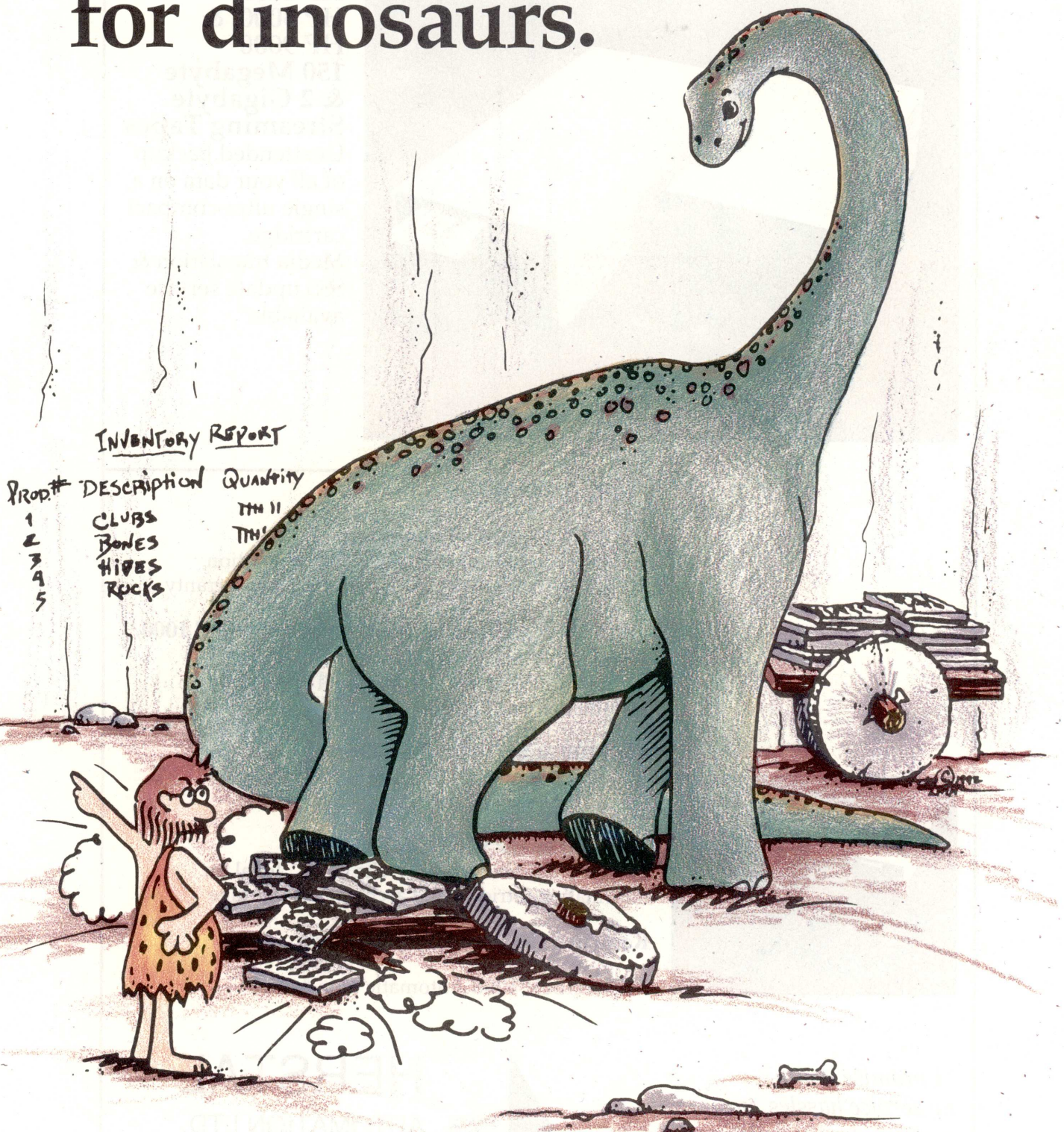
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UNIX
SYS_ADMIN

Fred Mallett

sunny afternoon. But thinking about how nice it was outside made me really depressed. So I pretended it was as miserable outside as I was feeling. I was busy inside, installing 12 new HP-UX workstations on a heterogeneous network.

The site where I was teaching had just decided to install a network of low-end workstations instead of X terminals. I was optimistic about the company's decision, until I started installing the machines and had to configure all the start-up files (*/etc/*rc**) for the proper servers, daemons and network configurations on each of the machines.

I had already set up the **netdist** area for all the static configured items we could: VUE startup files, host files, **inetd.conf** and other network constant files. I edited these files in the **netdist** area path so that they would be copied by the software load. The problem was that there are many configuration items that aren't static across the entire network. I could have created a set of different files and copied them over for each machine, but there are lots of different file sets to cover.

Go For The Gusto

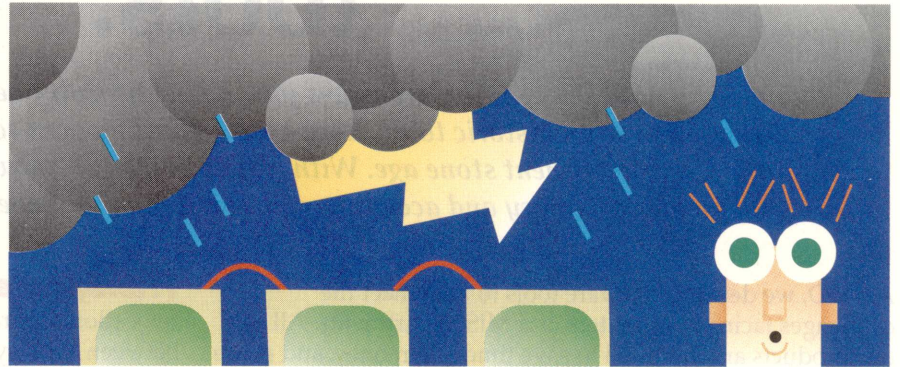
After returning to my office, I attacked this install problem with gusto. These were my goals:

- Have a single location for configuring a machine.
- Have a single location for listing system configuration.
- Assure configuration is comprehensive and expandable to other vendors
- Assure that the solution is easy.

Simplify Heterogeneous Network Installs With A Single Configuration File

Dark And Stormy Setup

It was a dark and stormy night. Well, really it was a



- Assure that the solution is cheap (pronounced "free").

Here's what I decided. It's not unique; in fact, it's similar to a configuration method used on SunOS, but I refined it to cover more conditions, including HP-UX. I can provide enough detail for you to be able to emulate my approach, but not enough so that you can copy it. You'll want to refine this approach to develop your own configuration method.

Stick To The Script

The Configuration File — There should be one file that you can easily add to and that will set all configuration parameters as variables. This file should be documented with comments so that new or junior system administrators will find it easy to work with. Everyone will have to remember only this one file name for most parameters. Valid entries should be listed for all settings.

The Configuration Script — Your script should perform three basic functions:

1. Set up a host for using the configuration method. This section will copy the "new" rc files into place.
2. List the current configuration. This will be a simple matter of reading the configuration file and printing a summary of system configuration. You could easily run this section against the entire net-

work with a "for" loop reading the host file for names to **remsh** to.

3. Personally, I would have stopped at function two and edited the Configuration file manually, but you may want to have a script that can change or create a configuration file. This way you could, say, easily change the network address of a group of hosts with **remsh** or enable a new service in the network.

The New /etc/*rc*Files — These files will be modified in two ways:

1. They will "source" in the configuration script. This will be to set all the variables needed to run the new rc files. Most systems, HP-UX included, have one rc file call another. */etc/rc*, for example, calls */etc/netnfsrc*. For this reason, you could in many cases have the configuration script "export" the variables and thus not have to edit so many start-up files.

2. This is the work part to this whole method. All sections of any rc files that you would want to control with this method must be edited. In many cases, this is simple.

HP-UX uses many variables throughout the shipped rc files, and you can tap into this. For example, when the variable used to start the client portion of NIS was set to 1, all NIS client servers



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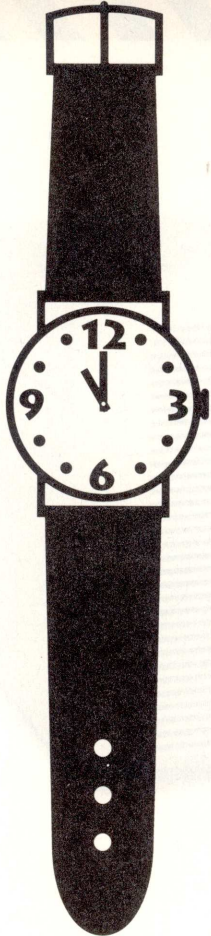
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would be started. In your configuration file, you could set **NIS-C=1** and then modify the **/etc/netnfsrc** files relevant line to:

```
NIS_CLIENT=$NIS-C
```

In many cases, this is not quite as simple a change. To start networking in this manner, I would change the following stock **netlinkrc** line:

```
/etc/ifconfig lan0 inet 'hostname' up
```

to:

```
/etc/ifconfig lan0 inet $IP_ADDRESS  
netmask $IP_MASK
```

where the configuration file defines the two variables.

Review And Opinion

The main problem with this installation method resides in the fact that there is religion involved in editing the **/etc/*rc*** files. Some say, "It's my system. I'll do as I please." And others feel it is taboo. Also, as revisions change, so do rc files, so they must be kept up to date.

A benefit is that you can use the same configuration file in a heterogeneous network, for all UNIX boxes, with the rc files edited for each operating system. This makes many administrative tasks similar on all machines, which is a big plus if you have as little fun as I do when searching files for the right sections.

The real plus is when something changes in your network — for example, you break 15 machines off into their own subnet. It's easier to go into one file on each machine than five files on each machine. Also, when a new machine is added, you can do a standard load of the operating system. Then use the script to put the "Configuration System" rc file in place and spend a few minutes editing the one file. I call the file that contains all the variables **/etc/system_config**. On HP-UX, if you're careful in your editing, tools like "sam" will still work.

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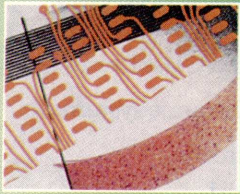
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PC TIPS

Miles B. Kehoe

There is a fundamental problem with MS-DOS that begins to surface when you start using a lot of Windows applications — your PATH statement gets too long. Since its inception, DOS has allowed no more than 128 bytes of environment to be used for the PATH variable. At the beginning, it was hard to believe that anyone would find 128 bytes of PATH inadequate, but back then we also thought a disk drive with no more than 1024 cylinders was plenty, too.

Just as your hard disk usage expands to exceed the amount of space you have, you'll soon realize your PATH expands to exceed 128 bytes as well. Fortunately, there are some easy solutions to this problem.

Clearing Your PATH

Because I like to create directories at the root level and prefer to organize my disk drive logically, I normally have a directory called APPSW for my Windows applications, and APPSD for my DOS applications. Then, as I install new applications, I locate the home directory for the application under the appropriate directory. Therefore, I install Windows applications like EXCEL and WINWORD under the APPSW directory, and DOS applications such as Laplink Pro and Paradox under the APPSD directory.

The downside to storing applications one layer from the root is that your PATH statement tends to grow more quickly than it would if you stored applications at the root level. Of course, I would still run out of PATH space without APPSW and APPSD, but it might take a little longer.

Windows Applications Can Stretch Your DOS PATH Statement To Its Limits

PATH Work

The first method I used to solve my PATH problem was to create BATCH files to run all my DOS applications and use completely specified PATH names in Program Manager groups for Windows applications.

I specify an environment variable in AUTOEXEC.BAT called BASEPATH and set it equal to my normal, minimum PATH. Then, at the end of AUTOEXEC.BAT, I assign PATH from the BASEPATH variable.

Next, I have a batch file called ADDPATH.BAT somewhere in my PATH. I normally keep all of my batch files in a directory called BAT, which I always have in my PATH. ADDPATH will add whatever text I give it to the current PATH.

I also have a batch file called INITPATH.BAT, also in my BAT directory. INITPATH resets the PATH from the BASEPATH environment variable. By running INITPATH.BAT, I effectively remove any PATHs I might have added with ADDPATH.

Simple AUTOEXEC.BAT, ADDPATH.BAT and INITPATH.BAT files are listed below:

```
(Simple AUTOEXEC.BAT)

REM - AUTOEXEC.BAT 12/15/92 mbk
@echo off
SET
BASEPATH=C:\BAT\C\BIN;C:\DOS;C:\WIN31;
PATH %BASEPATH%
PROMPT $PSG
```

(Simple ADDPATH.BAT)

```
@echo off
set path=%path%&1;
echo %1 added to path
```

(Simple INITPATH.BAT)

```
@echo off
set path=%basepath%
```

The batch file that runs Laplink Pro is as follows:

```
@echo off
rem - Run Laplink PRO
CALL C:\BAT\ADDPATH.BAT C:\APPSD\LLPRO;
llpro
CALL C:\BAT\INITPATH.BAT
```

Notice that I always remember to append a semicolon whenever I run ADDPATH; this insures that my PATH always will have valid syntax.

By using this method, I only add a directory to my PATH as often as I have to use one. But, sometimes adding and re-initializing the PATH isn't enough. There are instances when you want to save the current PATH, change it for whatever reason, then be able to go back and reset it. This is easy to do: When you execute the PATH statement, it reports the PATH as a command which, if entered at the console, is a valid PATH statement. This means if you direct the output from the PATH statement into a batch file, you can reset the path at a later time by executing that batch file. Consider the batch file SAVEPATH.BAT below:

```
Simple SAVEPATH.BAT

@echo off
PATH > C:\BAT\RESET.BAT
```

Later, when you want to reset the PATH, all you need to do is execute C:\BAT\RESET.BAT.

A SUBSTantial Improvement

While the batch files I mentioned are useful, there's another method that can be even more handy for solving the problem of a too-long PATH. The MS-DOS SUBST command lets you treat directories as if they were the root directory of a non-existent disk drive.

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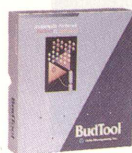


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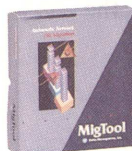
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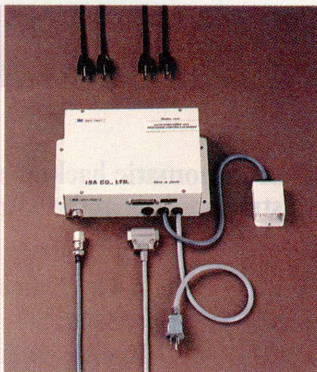
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This was originally handy when some programs didn't support subdirectories. You could simply install the program in a subdirectory and treat it as if it were a different disk drive. For example, in order to treat the C:\APPSW\WINWORD directory as if it were the root of drive K:, use the statement:

```
SUBST K: C:\APPSW\WINWORD
```

Then, when you change to disk K:, you will see all the files that are stored in C:\APPSW\WINWORD.

Some caveats: Be sure your LASTDRIVE statement in CONFIG.SYS allows a drive K:, and be sure that no physical or network drive will ever attempt to create drive K:. Also, some MS-DOS commands such as CHKDSK, FDISK, FORMAT and a few others don't work on SUBST drives. Finally, you cannot use a network drive in a SUBST statement.

You can probably see where I am going here. I install WINWORD and EXCEL (and my other long-PATH ed applications) as I normally would. But, after the installation, I create a SUBST drive for each application in AUTOEXEC.BAT and include just the drive letter in my PATH. I've shown a segment of a new AUTOEXEC.BAT file below:

(AUTOEXEC.BAT Using SUBST)

```
REM - AUTOEXEC.BAT 12/30/92 mbk
@echo off
SUBST X: C:\APPSW\EXCEL
SUBST W: C:\APPSW\WINWORD
SET
BASEPATH=C:\BAT;C:\BIN;C:\DOS;C:\WIN31;W:\;X\;
PATH %BASEPATH%
PROMPT $P$G
```

Notice that I still use BASEPATH as before, but now both WINWORD and EXCEL are included in BASEPATH without dramatically increasing the size of my PATH. This gives me the best of both worlds, and helps me stay inside the limits of MS-DOS.

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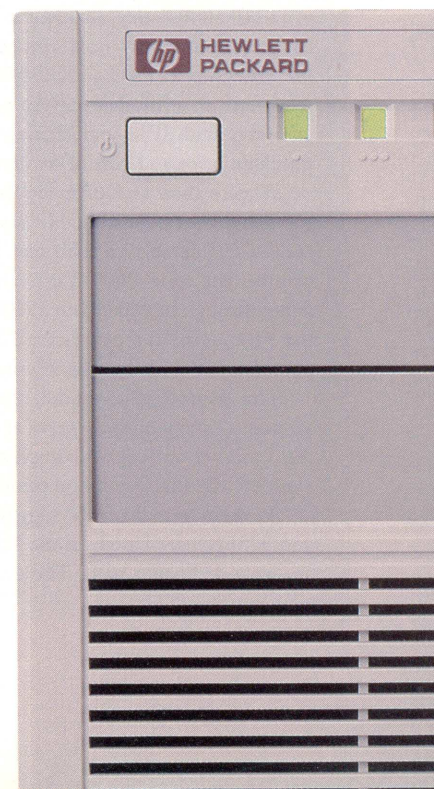
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NetAlert Reduces Staff Time

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ICC Debuts GUI For Shop Floor Data Manager

Industrial Computer Corp. (ICC) announced its new OSF/Motif graphical user interface (GUI) and complementary character terminal

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The GUI provides maximum performance and long-term flexibility and enhances ease of use across user interfaces without end user retraining. This is not just a cosmetic front end, but a windowing system built right into the fabric of the application.

Shop Floor Data Manager is a manufacturing execution system for discrete industries such as automotive, electronics and aerospace. It improves yields, product quality and time to market.

ICC's solutions run on HP 9000 Series 700 and 800 systems based on HP-UX.

Contact Industrial Computer Corp., 5871 Glenridge Dr., Ste. 300, Atlanta, GA 30328; (404) 255-8336.

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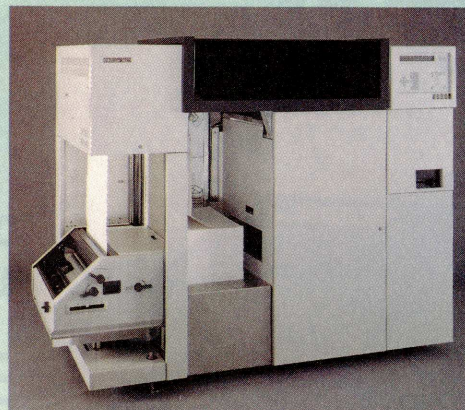
The HP 5000 F100: Where Does A 2,138 Pound Printer Sit?

HP would like to answer that question this way: in your data center. In conjunction with its expanding Mainframe Alternative Program, HP introduced four new enterprise-class fanfold printers in its HP 5000 family. In addition to the HP 5000 F100 introduced last year, the family now comprises the HP 5000 F100/Turbo, HP 5000 Model F135 and HP 5000 Models F100XP and F135XP. The four new models supply performance levels that compete favorably with IBM mainframe printers, but at significantly lower purchase price and cost of ownership.

Despite their size (five feet high, six feet wide and weighing in at just over one ton), HP says the new heavyweight printers are fast and flexible on their feet. Like the standard HP 5000 F100 printer, the new F100/Turbo moves fanfold, letter-size or A4 paper through its paper path at 100 pages per minute (ppm). Unlike the F100, it offers a new faster Turbo controller to speedily handle complex HP PCL macros or complex electronic forms.

The second new model, the HP 5000 F135, turns up the volume a notch, pushing paper at 135 ppm. The F135 also supports the Turbo controller for complex forms and provides HP's highest capacity solution for one up printing (one form per sheet of paper).

As their model names suggest, the HP 5000 Model F100XP and F135XP are based on the F100 and F135 models but feature an expanded paper path. These wide-print configurations extend



HP's 5000 F100 printer.

the standard 14-inch paper path to 17 inches, making it possible for customers to use software that enables two-up printing. Using 11- by 17-inch paper two-up formatting permits users to print two 8 1/2 by 11-inch forms on one sheet, thus boosting throughput on the F135XP to 210 ppm and on the F100XP to 154 ppm.

Curt Dowdy, HP 5000 family product manager, notes that the F135XP using two-up printing now surpasses the performance IBM offers with its top-of-the-line mainframe printers. "Printing two-up also reduces maintenance costs because less paper is actually going through the printer, and it reduces usage charges, which are measured by the foot, in chargeback environments," says Dowdy.

RGB Spectrum Presents RGB/Videolink 1500A

RGB Spectrum introduces the TGB/Videolink 1500A, a full color video scan converter that converts the output from virtually any computer to video. Applications include videotaping, transmission and projection.

The RGB/Videolink 1500A automatically synchronizes to any computer RGB signal with horizontal scan rates from 15.0-90.0 kHz interlaced or non-interlaced, including PCs, Mac IIs and workstations from HP Apollo and others.

Features include anti-aliasing, full 24-bit color processing and real-time operation.

Contact RGB Spectrum, 950 Marina Village Pkwy., Alameda, CA 94501; (510) 814-7000.

Circle 393 on reader card

AVS Available On All HP Workstations

Advanced Visual Systems Inc.'s Application Visualization System (AVS) is available on the complete range of HP PA-RISC workstations and servers.

AVS provides advanced data analysis and visualization capabilities to help researchers, engineers and analysts gain insight from the large volumes of data generated by medical imaging systems, satellite-based sensors, computational simulations and many other sources.

AVS also is used as a development environment to build applications in areas such as medical imaging, engineering analysis, financial modeling, environmental studies, GIS and oil and gas exploration and production.

Contact Advanced Visual Systems Inc., 300 Fifth Ave., Waltham, MA 02154; (617) 890-4300.

Circle 391 on reader card

Quest Enhances Plan-B Backup

Quest Software's Plan-B host-based PC backup product has been enhanced to support

both HP 3000 and HP 9000 servers. With Plan-B, PC backups are initiated and managed by the HP host providing turnkey backup capabilities.

Plan-B automatically can archive data from Netware, LAN Manager and OfficeShare PC clients and servers. It consists of host and PC software which transparently execute and manage a high-performance backup over the network to a UNIX or MPE XL server.

Contact Quest Software Inc., 610 Newport Center Dr., Ste. 980, Newport Beach, CA 92660; (714) 720-1434.

Circle 392 on reader card

Spyglass Unveils Transform For HP

Spyglass Inc. unveiled the latest addition to its data analysis product line, Spyglass Transform for HP 9000 Series 700 workstations and IBM RS/6000.

Transform is a shrink-wrapped visual analysis tool that allows scientists and engineers to quickly analyze large 2-D data sets. With Transform, surface plots, color raster images, line graphics, contour plots and vector plots can be created from 2-D data arrays with simple point-and-click operations that require no programming.

Spyglass Transform is priced at \$895. Contact Spyglass Inc., 1800 Woodfield Dr., Savoy, IL 61874; (217) 355-6000.

Circle 388 on reader card

Astea Releases Oracle For DISPATCH-1

Astea International announced its plans to release an Oracle database server for DISPATCH-1, its premier service delivery system.

DISPATCH-1 is capable of running in a wide variety of operating environments, including HP-UX. It offers customers the choice of operating system, hardware and now database. Astea expects that the new Oracle server will be the first of several database options that will be made available



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to DISPATCH-1 users over the next several months.

Contact Astea International Inc., 100 Highpoint Dr., Chalfont, PA 18914; (215) 822-8888.

Circle 389 on reader card

Alslys Expands Scope Of FreedomWorks

Alslys announced FreedomWorks, an open, distributed Integrated Project Support Environment (IPSE) based on international standards such as PCTE (Portable Common Tools Environment) and UNIX. It is available for the HP 9000 Series 700.

FreedomWorks integrates and controls specification, design, coding, testing, configuration management, project management and other tools and data within the software life cycle and Ada and C language development. It increases the quality of applications and productivity of software engineers by integrating CASE tools, project resource management and process control.

All project information is stored in a single, distributed, object-oriented repository

that enables graphical, windows-based access to any information required over the life of the project. The PCTE-compliant repository enables the storage and retrieval of objects that may be geographically dispersed or located on multiple servers.

Contact Alslys Inc., 67 South Bedford St., Burlington, MA 01803-5152; (617) 270-0030.

Circle 387 on reader card

MS-DOS Compiler Creates RTE-A Format Objects

Corporate Computer Systems announced the CCS/C 1000-PC, an MD-DOS cross platform development environment for RTE-A.

With CCS/C 1000-PC, you can use any MS-DOS computer to compile C source programs to produce RTE-A format objects modules. The resulting MS-DOS files can be directly linked to your A Series machine using the standard HP RTE-A linker and HP's RTE libraries. The compile step is performed on your MS-DOS computer at speeds many times that of RTE-A 400 or 600 class machines.


Contact Corporate Computer Systems Inc., 33 West Main St., Holmdel, NJ 07733; (908) 946-3800.

Circle 380 on reader card

HP BASIC Runs On Sun Platform

WorkStation Source announced the release of its newest version of HTBasic, the HTBasic Sun SPARCstation. the Sun version of the HTBasic represents the first time that HP BASIC will run on the Sun platform, and runs on the SPARCstation2 under X Windows, OpenWindows and on X Terminals.

HTBasic provides an alternative to the traditional HP BASIC workstation environment combining the effortless programming of HP-style BASIC with the advanced performance of the multitasking Sun SPARCstation environment. HTBasic, which is compatible with HP Series 9000 200/300 HP Workstation BASIC, provides the Rocky Mountain BASIC integrated program development environment including a syntax-sensitive, full-screen editor and



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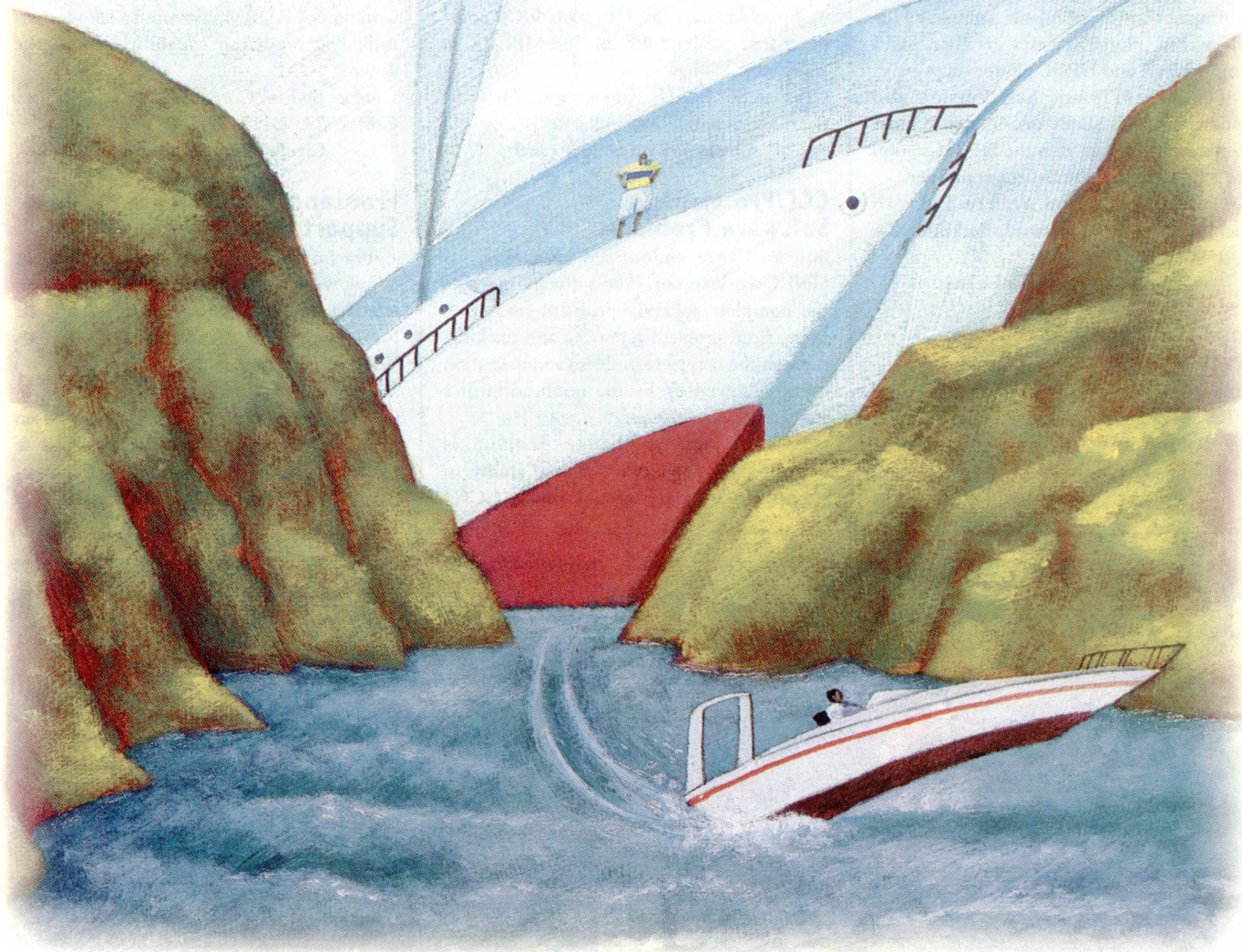
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interactive execution and debugging statement. HTBasic also includes transfer utilities to easily move data and program files between SUN SPARCstations and PCs, and between PCs and HP BASIC workstations.

HTBasic offers HP-style IEEE-488 commands, data acquisition and RS-232 instrument control statements, complete HP-style screen, plotter, printer graphics, SCPI compatibility, and HPGL plotter support.

The new HTBasic Sun Version also supports Iotech's SB488 or SCSI488/S series interface cards which turn the SPARCstation into a full-featured instrument controller. Contact WorkStation Source Ltd., 16 Auckland Close, Maidenhead, Berkshire SL6 8QB; 0628 75252.

Circle 382 on reader card

SpoolKit Accesses Print Spoolfiles

Strategic Information Resource Services (SIRS AG) announced SpoolKit, a user-friendly software tool for accessing and managing print spoolfiles.

The software features online listing of

spoolfiles; on-screen display of file contents; import capability into popular text editors; generic search and selection; amendment capacity of priority, device and number of copies for individual or mass updates; deletion of single or multiple files; and report replication assignable to other print devices.

SpoolKit uses the HP 3000 9XX computer series under MPE XL and MPE/iX. It is priced at \$345.

Contact SIRS AG, Zugerstrasse 74, 6340 Baar, Switzerland; 0041-42-330631.

Circle 385 on reader card

CCC/Pro Manages Software Problems

Softool Corp. announced CCC/Pro for UNIX workstations. The software manages the complete software problem resolution cycle, from problem reporting and tracking, through the complete problem administration cycle, followed up by the notification of a software change request.

When such a change request is implemented, CCC/Pro has the ability to continually interface with Softool's CCC/

Manager product family which manages software changes, from development through maintenance.

CCC/Pro taps into a company's existing E-mail packages to alert users that a problem or change request has reached a new phase of the software life cycle. It relies on commercial RDBMS systems to allow users full SQL reporting capabilities with the system.

Contact Softool Corp., 340 S. Kellogg Ave., Goleta, CA 93117; (805) 683-5777.

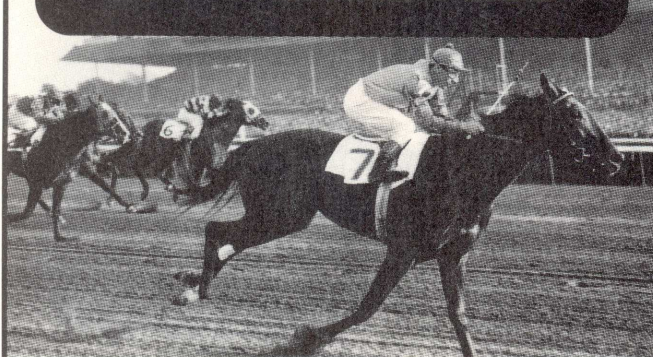
Circle 384 on reader card

Frontender! Development Tool Support Reflection Emulator

Zebra Software released Frontender! for Windows 2.1 an HP and DEC client-server interface development tool that now supports Reflection for Windows and embeds Windows graphics.

The new version works as a toolbox to link Windows-based PCs with programs on HP and DEC servers. Frontender! tools create a client-based Windows interface with server-based applications. The 2.1 version of

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Frontender! supports WRQ's Reflection for Windows terminal emulator. Frontender! also supports HP's AdvanceLink for Windows and Tymlabs' Session for Windows terminal emulators.

Frontender! for Windows 2.1 now lets users hot-link Windows graphics to client

screens. The ZTool Box palette of Frontender! now includes a Picture Box object, a new palette button that places bitmaps, metafiles or other Windows graphics output on Frontender! screens.

Users can update a maintain data on host applications, and the development tool

provides a true distributed data processing environment without making changes to host applications.

Contact Zebra Software, 2108 Lewood Circle, Austin TX 78745; (512) 444-3320.

Circle 377 on reader card

ISICAD/HP Alliance Yields Network Management Solution

ISICAD Inc., announced the first set of applications available for HP's new integrated enterprise management solution, allowing companies to manage network resources across heterogeneous networking environments.

ISICAD has extended Comprehensive Network Management to TCP/IP, NetWare, DECnet and SNA environments. This new solution provides access to logical and physical connectivity information integrated with trouble-ticketing functions across multi-protocol enterprise networks via a central management station.

Comprehensive Network Management is comprised of ISICAD's COMMAND physical network management software package, COMMAND HelpDesk capabilities and HP's OpenView logical network management system, all integrated on a single management station.

Contact ISICAD Inc., 1920 West Corporate Way, P.O. Box 61022, Anaheim, CA 92803; (714) 533-8910.

Circle 381 on reader card

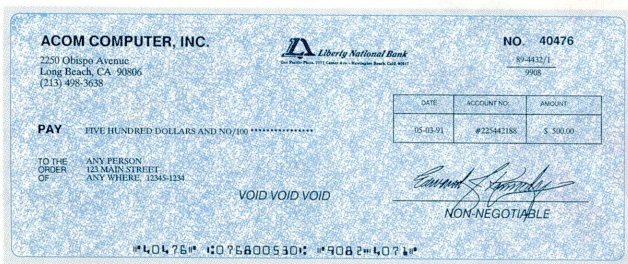
Quick Restore Provides UNIX Network Backup And Restore

Workstation Solutions offers Quick Restore, a network backup and restore program. Quick Restore offers several features including a client-server model plus a special device driver that exploit the direct-to-block positioning capability 8mm tape drives or 4mm DAT drives.

Quick Restore accesses both local and remote file systems and tape drives from any point on the network without requiring the presense of NFS, supporting backup and restore operation for any combination of local or remote files with local or remote tape drives. Quick Restore uses on-line catalogs to maintain critical information such as backup histories, volume IDs, owners and pathnames and the exact position of backed up data on tape. Backup description files specify the exact collection of files for a backup, allowing a system administrator to



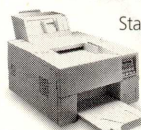
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select backup data down to the level of individual files, including support for using standard UNIX wildcard characters to identify file inclusions and exclusions. Quick Restore does full backups and 11 levels of incrementals.

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Quick Restore runs on HP 9000/300/400/700 Series, Apollo Domain and other workstations. Price is \$2,950.

Contact Workstation Solutions, 15 Trafalgar Square, Nashua, NH 03063; (603) 880-0080.

Circle 361 on reader card

Falcon Supplies Platform-Independent RAID For 9000

Falcon Systems announced a platform-independent RAID system for the HP 9000.

Falcon Systems integrated the RAID system in a platform-independent config-

uration which requires no additional software on the host system. It consists of twin 15-GB towers, each with five, 5.25-inch hot swappable drives, running at RAID Level 3 installed on an HP 9000 server.

The RAID system controller handles all file management and parity stripping so the RAID system appears to the host as one SCSI device.

Its available for IBM RS/6000, Sun and Silicon Graphics systems.

Contact Falcon Systems, 1417 W. North Market Blvd., Sacramento, CA 95834 (916) 928-9255.

Circle 376 on reader card

Clearpoint Extends Memory Upgrade To 9000/700 Series

Clearpoint Research introduced memory upgrade kits for HP's 9000/700 series workstations.

HP memory upgrades are compatible with HP's workstations: Series 9000 715, 725/50, 735 and 750. The offerings include a 128 MB single in-line memory module (SIMM) for the Series 9000 Model 715, 725 and 730 as well as a 128 MB upgrade for the series 9000 Model 735 and 750. The 128 MB upgrades use 16 Mb DRAM technology and Clearpoint's mother-daughter card design.

Also announced were memory upgrades of 8, 16, 32 and 64 MB upgrade kits for the Series 8000 and 9000.

Prices range from \$2,100 to \$15,500. Contact Clearpoint Research, 35 Parkwood Dr., Hopkinton, MA 01748; (508) 435-2000.

Circle 360 on reader card

UIM/X 2.5 Supports Motif Users

Visual Edge Software released a new version of its GUI builder, UIM/X 2.5.

Five new features include: GUI object class components, which enable developers to build, using drag and drop, GUI object classes which comply with the Object Management Group's CORBA C API specification; C++ code generation; cross platform development capability, which allows for interface creation out of custom-built portable GUI class components; UIM/X palettes, which encourage novice Motif users to use UIM/X and full support of Motif 1.2.

Contact Visual Edge Software Ltd., 3870 Cote Vertu, St. Laurent, Quebec H4R 1V4 Canada; (514) 332-6430.

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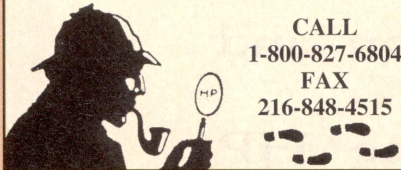
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Editorial Focus — Desktop Solutions

■ **Memory Requirements** — With application size increasing, the demand for workstation and server memory has never been higher — but upgrading large workgroups can be costly. Fortunately, HP users have numerous affordable third-party products from which to choose.

■ **Insourcing/Office Automation** — Back office functions like payroll and benefits administration have traditionally required expensive systems and substantial in-house expertise. Consequently, many smaller firms contracted service bureaus or outsourcing firms to handle these tasks. Now thanks to low-cost RISC hardware, automated systems management and intuitive, GUI-based financial applications, “insourcing” — bringing outsourced applications and services back in-house — has become an industry trend.

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And Another Thing ...

:-) When You Say That!

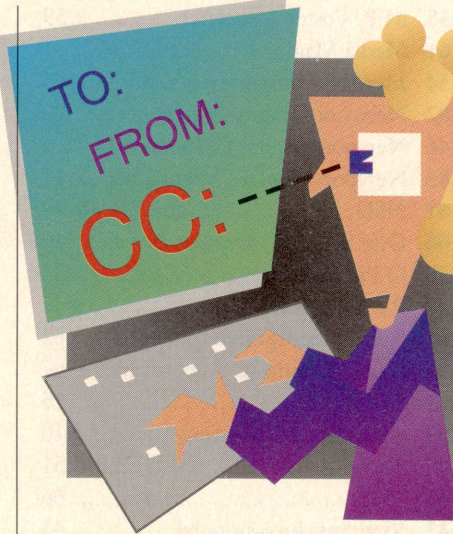
In business, the name of the game is communication.

That's why we spend so much money on telephone systems, fax machines and electronic mail networks. Presumably, there's some payback that's worth the cost. Unfortunately, E-mail is often underused, misused or abused. Sure, some messages get sent back and forth, but are we really communicating?

Even if you get over the hump and learn the arcana of your company's E-mail system, all you've done is master the art of sending bits. Actually, communicating via E-mail requires other new skills — like learning how to write.

The worst offenses are errors in spelling or grammar. I don't think anybody expects E-mail messages to be great literature, but neither do they expect "illiterature." No matter how nice your suit and haircut are, you can look really stupid firing off some half-baked, unchecked memo. For some reason, which I can't fathom, none of the E-mail systems I use provides a grammar- or spell-checking feature. Some (mostly PC-based) E-mail systems do provide hooks for using your word processing software to compose and check messages, but I keep getting stuck with mainframe- and mini-based systems with cheesy editor programs.

Another problem is that we've spent the last 40 years forgetting how to read and write effectively. Televisions and telephones have made us lazy and stupid. People don't write to their friends — they call them on the phone. Half of us don't read newspapers — we get our information fix from the tube. And, reading books ranks right up there with floss-



ing: It's something you know you should do more, but don't.

In the process, we've lost our feel for the written word. The subtlety and nuance of face-to-face and verbal communications are tough to represent in text, and often get lost in E-mail messages. If you're careless, you can come across the wrong way, sometimes with disastrous results. Without the visual and verbal cues to back them, E-mail messages can sometimes be misconstrued. What you thought was a harmless suggestion might come across as snotty or condescending. Without a smile to back it, that humorous aside might not seem so funny.

Control Your "Emoticons"

Some users compensate for this lack of cues by livening up their messages with "emoticons" — those nasty little devices that :-) grin at you, or :-(frown at you, or :-P stick their little tongues out at you. Aside from looking really stupid, emoticons are a poor substitute for learning how to put words together in a clear, unambiguous sentence. If what you write isn't funny, a :-) behind it won't make it so, and no amount of :-(ing is going

to add impact to your message. If you have to make faces at someone, do it in person.

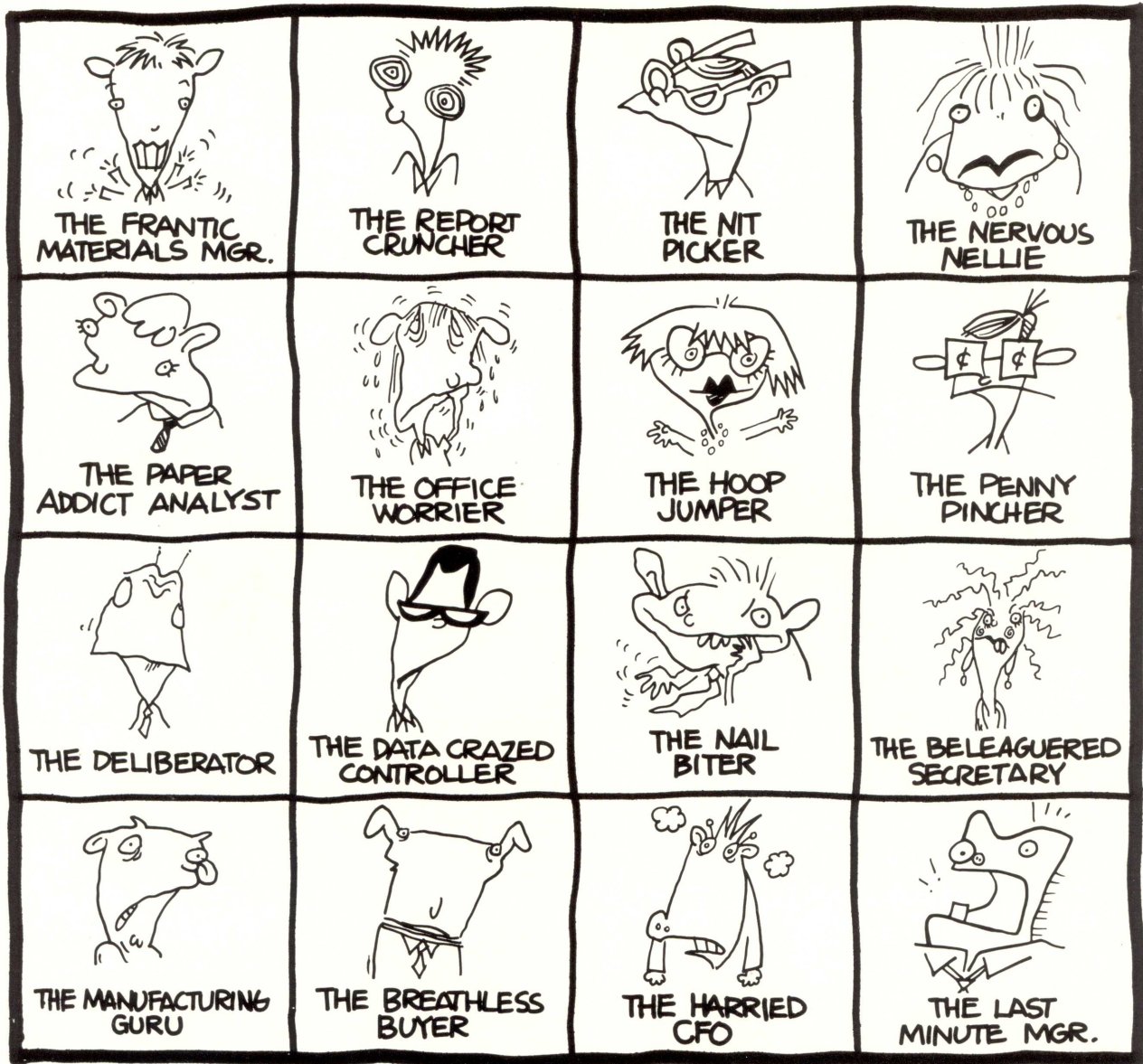
Although not real-time, like a meeting or a phone conversation, one of the charms (and problems) of E-mail is its immediacy. That means you don't have the time to chisel a memo out of granite and have it proofread by a half-dozen lackeys before you post it. You get a message, you respond. That fast.

Although a great time-saver, this immediacy also can make you shoot from the hip, and completely miss your target. Have you ever had your chain yanked by an E-mail message and made the mistake of responding while you were still in the yanked state? This is not a good thing to do. Especially if you CC: half of headquarters in the process. Sometimes it's better to sit and think for a spell before unleashing a vitriolic barrage in an E-mail reply.

That brings up the issue of ridiculous distribution lists. Unlike paper memos, which have to be photocopied, stuffed in envelopes and distributed, E-mail messages can be painlessly sent to as many people as you want. Some E-mail users take this capability as a license to send their drivel to everyone on the network.

Some people are lazy, stupid, or both, and they keep reusing one or two multipurpose distribution lists to send their stuff to a bunch of people. Other offenders just like to make sure everyone knows how hard they're working by mass distribution of their memo masterpieces. Both practices should be avoided. Most of us get enough E-mail that we don't need any more. Besides, the fewer people you send something to, the less embarrassed you'll be if you say something stupid :-). ■

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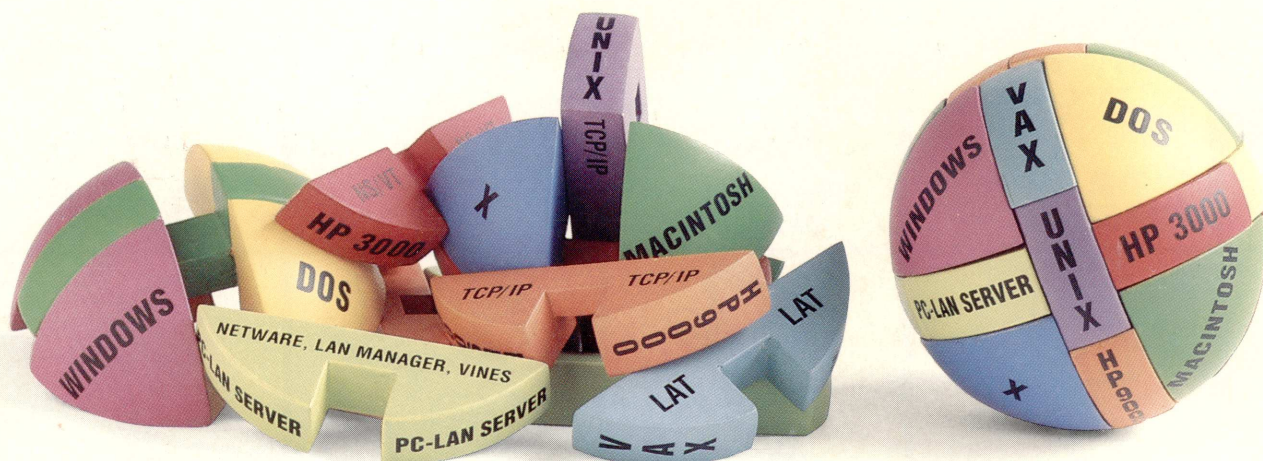
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